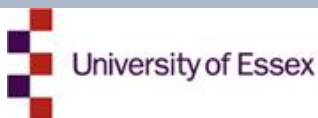# ENTREPRENEURSHIP AND SUSTAINABILITY ISSUES

2(1)

2014

Dear readers,

Today it's my pleasure to introduce the first issue of the second volume of international peer-reviewed scientific journal *Entrepreneurship and Sustainability Issues.* The journal has been started year ago; it's a short time from historical point of view but sufficiently long to live through turbulent times of change. The 21st century appears to be not only century of technology, innovations and rapid development; it appears to be century of new and not new; known and unknown threats and insecurities.

Economic security of any country depends on safety and security of trade, tax collection, transparency and equality of business conditions. Customs perform big, times invisible job, in protecting society, securing health of finance, economic health of country, which ultimately leads to social security of all citizens. Hence, sustainable development is intertwined, and I would say, dependent on various facets of security. Economic security here is of the second importance if to compare to security against military interventions.

In that context I wanted to greet and encourage ongoing attempts of scientific, statutory and civic societies, practitioners and other stakeholders in fostering international discussion bringing urgent issues of secure and sustainable development. I truly believe our common concern, interest, knowledge and enthusiasm will be rewarded by peace brought by security and affluence brought by balanced sustainable development of our country and the whole global village.

With best regards and encouragement

ANTANAS ŠIPAVIČIUS
Director General
Customs Department under the Ministry of Finance of the Republic of Lithuania

International Centre for
Entrepreneurship Research

Volume 2   Number 1   September 2014

ENTREPRENEURSHIP AND SUSTAINABILITY ISSUES

2014
2(1)

Editors-in-Chief

Prof. **Jay Mitra**, University of Essex, UK
Prof. **John Saee,** Reutlingen University, DE

Areas of research include, but are not limited to, the following:

- **Conceptual Approaches towards Entrepreneurship**
- **Entrepreneurship and Sustainable Development**
- **Globalization Processes Sustainable Development**
- **Innovations and Technological Development for Entrepreneurship and Sustainability**
- **Transition Issues and Sustainable Development**
- **Entrepreneurship and Environmental Sustainability**
- **Economic Growth and Entrepreneurship**
- **Economics and Management of Sustainable Organizations and Industries**
- **Intercultural Communication for Security and Sustainability**
- **Sustainable Development of Sector Economics**
- **Sustainable Finance and Investment and Entrepreneurship**
- **Strategic Management for Sustainability**
- **Case Studies on Entrepreneurship and Sustainable Development**
- **Sustainable cities and entrepreneurship**
- **Organizational studies**
- **Social cohesion and social innovation**
- **Public policy, economic security for sustainable entrepreneurship**
- **Business models and strategic management for sustainable futures**
- **Social responsibility and sustainable development**
- **Psychology and entrepreneurship**
- **Intuitions about contemporary phenomena in business and society**
- **Social inclusion and entrepreneurship**
- **Social inclusion and sustainable development of societies**
- **Life-long learning and sustainable development**
- **Life-long learning and entrepreneurship**
- **Women and entrepreneurship**
- **Creative industries and entrepreneurship**
- **Case studies**

All papers published in the *Entrepreneurship and Sustainability Issues* are indexed/abstracted by:

- ECONIS of the ZBW – Leibniz Information Centre for Economics *http://www.zbw.eu/EconBiz*
- RePEc *http://repec.org/EconBiz*
- Ulrich's Periodicals Directory
  Serials Solutions *http://www.serialssolutions.com/*
  a ProQuest business *http://www.proquest.co.uk/en-UK/*
- Crossref
- Google Scholar
- The European Library *http://www.theeuropeanlibrary.org*
- Database Lituanistika *http://www.lituanistikadb.lt*
- Index Copernicus International

Prof. **Ing. Zuzana Dvorakova**, University of Economics, Prague, Czech Republic zuzana.dvorakova(at)vse.cz

Prof. **Ani Matei**, National School of Political Studies and Public Administration, Romania amatei(at)snspa.ro

Prof. **Murtala S. Sagagi**, Bayero University Kano, Nigeria mssagagi(at)yahoo.com

Dr. **Kavita Singh**, University of Delhi, India kavita(at)fms.edu

Prof. **Pacha Malyadri,** Government Degree College, Osmania University Patancheru**,** India gdcpatancheru(at)gmail.com

Dr. **Ulku Yuksel**, The University of Sydney, Australia ulku.yuksel(at)sydney.edu

Dr. **Juris Ulmanis**, Experiential Simulations, Canada juris.ulmanis(at)rbs.lv

Dr. **Sarvar Gurbanov**, Qafqaz University, School of World Economy, Azerbaijan squrbanov(at)qu.edu.az

Dr. **Renata Korsakienė**, Vilnius Gediminas Technical University, Lithuania Renata.Korsakiene(at)vgtu.lt

Dr. **Mantas Bileišis**, Mykolas Romeris University, AVADA, Lithuania mantas.bileisis(at)mruni.eu

As. prof. **Virginija Grybaitė**, Vilnius Gediminas Technical University, Lithuania Virginija.Grybaite(at)vgtu.lt

Prof. **Mehmet Huseyin Bilgin**, Istanbul Medeniyet University, Turkey bilgin(at)ebesweb.org

Prof. **Levent Kosekahyaoglu**, Suleyman Demirel University, Turkey leventkosekahyaoglu(at)sdu.edu.tr

Assist.Prof. **Meltem Caber**, Akdeniz University, Tourism Faculty, Turkey meltemcaber(at)akdeniz.edu.tr

Prof. **Marina Sheresheva**, National Research University Higher School of Economics (HSE), Russian Federation m.shersheva(at)mai.ru

Prof. **Ramaswamy Ganesan**, King Saud University, Kingdom of Saudi Arabia ganesan_gramaswamy(at)ksu.edu.sa

Prof. **Bora Aktan**, University of Bahrain, the Kingdom of Bahrain gbora(at)uob.edu.bh

Prof. **Abuzar Wajidi**, University of Karachi, Pakistan abuzar_wajidi@hotmail.com

CONTENTS   Volume 2 Number 1 September 2014

RISE AND FALL OF THE LYON SILK CLUSTER:
A CASE STUDY ABOUT ENTREPRENEURIAL SUSTAINABILITY

Pierre Bonetto[1], Bernd Hofmann[2], Gunnar Prause[3]

[1]70 Grande rue de la Croix-Rousse, F-69004 Lyon, France;
[2]University Claude Bernard Lyon 1, IUT Lyon 1, Dépt. GEA, 1 rue de la Technologie,
F-69622 Villeurbanne Cedex, France;
[3]Tallinn University of Technology, Akadeemia tee 3, 12618 Tallinn, Estonia

E-mails: [1]pierre649@wanadoo.fr; [2]bernd.hofmann@univ-lyon1.fr; [3]gunnar.prause@ttu.ee

Abstract. Innovation is the key driving factor for economic growth and social wealth. Already Joseph Schumpeter emphasized the importance of innovation for entrepreneurial activities by incessantly revolutionizing economic structures in order to get better or more effective processes and products. So a lack of innovation may quickly lead into business failure or – even on a sectorial level – loss of market positions. An actual example is the textile design sector located in the city of Lyon, which rose together with the Lyon silk industry for centuries and collapsed and nearly disappeared nowadays, although it occupied the world leader position up into the 1970ies (Bonetto *et al.* 2014). Innovation is the specific tool for entrepreneurs to exploit business opportunities and innovation is also one of the key driving factors for economic grow and social wealth. Innovative products and services emerge more often as a result of cross-sectorial combination of technologies, design and business models, especially in the context of regional clusters (Drucker 1985). Already Joseph Schumpeter emphasized the importance of innovation for entrepreneurial activities by incessantly revolutionizing economic structures in order to get better or more effective processes and products. His famously words concerning "creative destruction" stressed already the close links between entrepreneurship, innovation and design (Schumpeter 1911). Numerous articles of scholars discuss how innovation procures substantial income on the international markets and allow benefiting from competitive advantages.

This paper will focus on the fact how lacking investment in innovation and specific business culture lead to situations where disadvantages take a cumulative character which strengthens the process of decline of economic competitiveness and loss of market shares. In the case study about the life-cycle of the French silk industry and its related entrepreneurial activities in the area of textile design in the city of Lyon, it is illustrated how a lack of innovation related with a specific entrepreneurial behavior is leading to a collapse of the whole sector, which, until the 1970ies, occupied a world leading position in this field. The case study is based on interviews of experts and actors involved in this business, witnesses to the activity's collapse, on desktop research and the study of documents which analyze the evolution to the currently existing situation. Currently, only isolated persons continue on a free-lance basis the traditional activity, most of them close to retiring age. A few companies, with significantly reorganized activities do as well continue their activity.

Keywords: innovation, entrepreneurship, cluster life-cycle, sustainability, textile-design

1. Introduction

Hayek (2002) stresses that innovation and research in the 21st century are increasingly becoming international endeavors and most innovations originate from multiple sources, with many drawing in components or technologies developed in multiple locations. Foray *et al.* (2011) explain that, the potential evolutionary pathway of this innovation system is dependent on inherent structures and existing dynamics that have to do with the adaptation of radical transformation. Zhao (2005) studied the relationship and interaction between entrepreneurship and innovation and pointed out that the organizational culture and the management style are crucial factors affecting the development of entrepreneurial and innovation behavior in organizations. In recent studies Classen *et al.* (2013) focus on differences of attitudes towards innovation investment in family and non-family SMEs, or Rauch *et al.* (2013) analyses the attitudes towards innovation linked to national cultures of business owners.

So today, innovation is increasingly complex, fast, interactive, and requires the connection of external and internal knowledge bases (Chesbrough 2003). Companies acquire knowledge from a variety of different sources and actors and combining it with internal and localized knowledge and expertise since which is crucial for competitiveness as innovation processes in the interplay between local and complementary global knowledge (Porter 2000; Gertler and Levitte 2005; Boschma and Ter Wal 2007; Laužikas, Mokšeckienė 2013; Išoraitė 2013; De Alencar, Almeida 2013; Wahl, Prause 2013; Tvaronavičienė 2014; Dzemyda, Raudeliūnienė 2014; Bileišis 2014; Išoratė *et al.* 2014; Wahl 2014; Figurska 2014; Litvaj, Poniščiaková 2014). Despite the multitude of insights into technology transfer, remarkably little is known about how transfer processes are shaped by the underlying industry and its technical regimes (Breschi *et al.* 2000; Marsili 2001; Gilsing *et al.* 2011; Korsakienė 2013; Giriūnienė 2013; Korsakienė, Tvaronavičienė 2014).

Geographic approaches to innovation have also long been discussed in the management literature and go back to contributions like Porter (1998), Jaffe *et al.* (1993) or Anselin *et al.* (1997). The region and its clusters moved into the focus of attention to systematically study innovation activities (Cooke and Morgan 1998; Porter 2000). Other scholars emphasize beyond geographical settings and spatial aspects also the external environment which influences heavily regional development and its networks (Florida 2002; Bluhm 2008). The emergence of regional innovation networks together with the roles of involved stakeholders and related success factors have been studied intensively by other scholars (Goddard 2000; Meier zu Köcker 2008). But most contributions study well performing regions and emerging clusters whereas the consideration of the full cluster life-cycle represents a rather neglected research topic.

This is of special interest for the understanding why the silk cluster and the related textile design sector in the French city of Lyon which, until the 1970ies occupied a world leading position in this field, collapsed due to a lack of innovation and its special entrepreneurial culture. Currently, only a few textile design entrepreneurs and design companies continue the traditional activity, most of them close to retiring age. This case study witnesses an important example of cluster life-cycle over a longer period of some centuries combined with forms of "unsustainable entrepreneurship" which represents a counterexample for the Lisbon strategy, formulated in 2000 by the European Union in order "*to become the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion*". This commitment is renewed under the EU 2014-2020 budget framework. National governments and subnational territorial structures backed these goals including France and the French Rhône-Alpes Region, which has voted in 2013 its SRI-SI plan (Regional innovation strategy – intelligent specialization).

The insights of this paper express the fact that cluster development based on closed innovation understanding and lacking investment in innovation together with an auto centric business culture lead to strategic disadvantages, a decline of competitiveness, loss of market shares and finally the fall of the entire cluster including all related entrepreneurial activities. As a consequence in the Lyon situation of Schumpeter's "creative destruction" process the silk cluster and its textile design entrepreneurship sector moved from France *to other destinations.*

2. Literature review

Innovation management is usually associated with processes. As coined by Schmitt-Grohe (1972), these processes incorporate three key phases: idea generation (1), idea analysis (2) and idea implementation (3) (Schmitt-Grohe 1972: 52). On the basis of these observations, Benkenstein (1998) has proposed the following innovation management concept, so-called innovation funnel. By drawing in his observations, the innovation management model includes four stages: idea generation (1), research, development and conception (2), product and market test (3) and implementation (4).

Following Bartl (2008), *open innovation* is referred to the concept, which underscores the way of going beyond the corporate boundaries, i.e. an active strategic deployment of environmental clout or external factors of influence to increase its own innovation potential. Crucial determinants of such concept are the shift from the industrial society to the network-based knowledge and communication society. As a result, innovation occurs and ideas are generated in such a society through the interactive creation of value. Additionally, open innovation encompasses such manifestations as to be open for the knowledge of the other, generation of the knowledge as a joint action as well as the share of the knowledge with the other. Besides, an important role for the phenomenon open innovations plays the customer. In the course of innovation management, there was generated a new role model of the customer when developing new products or offering new services. In this sense, open innovation emerges also when the customer is involved into the process of generation. Therefore, it is vital to adapt to customer's needs and requirements as well as wishes in the customer goods markets. Furthermore, it is essential to integrate the customer into the entrepreneurship innovation-related activities as a new external knowledge and ideas source (Bartl 2008: 3-4). Zhao (2005) confirmed that entrepreneurship and innovation are positively related to each other and interact to help an organization to flourish, i.e. entrepreneurship and innovation are complementary, and a combination of the two is vital to organizational success and sustainability. He also pointed out that the organizational culture and the management style are crucial factors affecting the development of entrepreneurial and innovation behavior in organizations.

Sustainable entrepreneurship is a relative new concept, which can be distinguished from economic and social entrepreneurship by stressing the efficiency and effectiveness in an inter-generational economic consideration for the future (Young and Tilley 2006: 402). Thus, sustainable entrepreneurship is in line with entrepreneurs heading for profit and improving environmental sustainability and social conditions, i.e. considering the long-term economic and business consequences of new venture opportunities (Cohen and Winn 2007: 35). One important problem of the on-going discussions about sustainable entrepreneurship is that the existing concepts are rather oriented on the needs and the situation of larger companies than on reality of the SME sector. When it comes to the implementation of sustainable entrepreneurship concepts, Gerlach (2003) proposes three strategies to reach sustainability in the context of entrepreneurship based on sufficiency, efficiency and consistency. Taking a closer look at theoretical concepts and approaches under scrutiny, these tend to interface at the respective points or to address same or similar questions from the corporates perspective. For instance, interdisciplinary nature, idea generation and implementation (Brown 2008; Benkenstein 1998), a broader view on the enterprise (internal and external factors), needs for solving problems, intertwined and on-going process from the fields of design, technology or innovation, and business, the sustainability factor etc. have been located in particular discourses regarding these concepts.

Pascual *et al.* (2011) point out that process of designing, developing and implementing solutions should follow some of five key points including the observation that (1) sustainable development is a process and not an end, that (2) sustainability requires incremental and continuous improvement, that (3) not always everything can be achieved, that (4) the "Holy Grail" of sustainability does not exist, that (4) individual consumer benefits have to be linked to social and environmental benefits and that (5) functionality equals impact. Finally geographic and cluster related approaches in the context of innovation have been discussed over a long time in the management literature and go back to contributions like Porter (1998), Jaffe *et al.* (1993) or Anselin *et al.* (1997). Especially the New Economic Geography (Krugman 1991, Fujita and Krugman 2004) discusses agglomeration processes and economies of scales generated through specialization. So the region and its clusters moved into the focus of attention to systematically study innovation activities (Cooke and Morgan 1998; Porter 2000). Most contributions

study very well performing regions and clusters, but they neglect that clusters underlie also life-cycles, especially the decline of clusters have not been in the centre of entrepreneurial cluster research (Sölvell 2008; Lindqvist *et al*. 2013).

3. Methods

The paper describes a case study of the development of the silk sector with a focus on the textile-design entrepreneurial activities in Lyon within the last 50 years. A special focus is laid on organisational, cultural and innovation topics which were related to important stages in the Lyon silk industry. The research process described in the paper has pursued a manifold research path, whereby diverse research methods have been combined with the respective research approach and research tool. Five techniques were employed in exploring the objectives of the present paper. *Research types:* analytical, qualitative, historical, empirical, and practice-based. *Research approach:* qualitative. *Research methods:* descriptive and qualitative – case studies, semi-structured interviews, expert assessments and observations. Research scope: different research activities between spring 2013 and spring 2014. The reasoning behind the selection of the following techniques in the research process is elaborated in the following. Regarding the *research types*, the paper has chosen analytical, qualitative, empirical and practice-based way, since during the research process the facts and empirical evidence gathered were appropriately analysed and subject to a critical assessment. The core of the research process is the qualitative *research approach*. Important insight views were given in qualitative experts interviews with still active textile designers in Lyon where the interviews with Pierre Bonetto and Marc Terrier contributed outstandingly to the understanding of the case study about the textile design sector in Lyon (Bonetto *et al*. 2014).

4. The silk industry in Lyon

Textile industry is a major sector of activity in Lyon since its roots in the 15th century. It developed into a vertical cluster, which reached several times a climax period (late 18th century, second half of the 19th century, between the two world wars under an already strongly adapted structure), including supply of raw material, production and distribution, essentially through export. The historical description of the development of the Lyon silk industry is based on the studies of Anne Marie Wiederkehr (Wiederkehr 1981).

At different stages of the existence of this industry, institutional support via tax and production privileges or through support to innovation can be considered to be key factors for the commercial success of Lyon-made textile, especially silk. The very beginning of silk production in Lyon is due to a royal order issued to the local citizens to establish and finance silk weaving workshops in their city (Regulation of 23.11.1466, issued by King Louis XI; Wiederkehr 1981). The aim is to avoid money transfers out of France to pay imports of essentially Italian made silk products highly appreciated by French aristocrats and negotiated on the important Lyon fare. The failure of this first trial appears to be the lack of size of the activity thereby generated, making it unable to stand price competition.

A renewed attempt in the 1530ies granted tax freedom and privileges to Italian merchants planning to establish workshops in Lyon. In this frame, the city was granted the monopoly of import of raw silk thread. This time the establishment of a structured, competitive activity succeeded, the Italian and French production of low range silk products was gradually replaced by products made in Lyon. The vertical cluster of a whole, interlinked, production sector appeared after the upheavals of the second half of the 16th century only. Again due to royal desire to master the entire production chain, silk farms where established in the southern part of France, supplying Lyon with raw material. Introduction, from Italy, of adequate knowledge and technology, allowed the Lyon based workshops to increase the sophistication- and quality-level of local production meant essentially to furnish the French Royal House and important aristocrats.

The reputation of French taste, going along with the rank of France as cultural trend setter among the aristocratic societies of Europe allowed the French silk industry to develop into a highly performing, innovative and economically important production sector. The support to innovation grew into institutional forms, granted either by the guild or by the municipal authorities in cooperation with royal representatives and financed on customs

levied on textile imports. This structured system of support to improvement of technology and design involved in increasing manner cooperation between both public and professional authorities. It is interesting to see in the case of the Lyon silk industry, how over a long period a given industry, with the help of professional and public authorities was able to become competitive and further, predominant in Europe. On the foundations of this stronghold the sector throughout the 19th century was able to maintain its place and proofed to be capable to undergo the necessary evolution to cope permanently with market requirements and technological evolution. By the end of the 19th century pure silk lost its importance and was successfully replaced by mixed products and later artificial fibers, which allowed increasing the number of social groups able to afford products of this industry. About 80 % of the regional production was exported. The USA and Great Britain were by far the most important markets, buying ¾ of the production. Only very recently, during the 1970 the final decline process started and led within 30 years to the vanishing of the entire sector in Lyon.

Before the start of the phenomenon of mechanization of this sector, in the 1860ies, Lyon had about 180 000 inhabitants and roughly 30 000 looms. This single figure may provide an impression of the high importance of this sector. Evidently, it was not limited to the municipality of Lyon, but made off an important portion of the regional economy, workshops and direct sector-related activities were exercised within a range of about 60 km of Lyon, not to speak of the silk thread production in the Southern part of France.

The core of the Lyon silk fabric, production and distribution, involved a system of four groups of specialized participants which formed during the prerevolutionary era: Merchants, mastering the supply of raw silk threat and being in contact with the final customer, furnish local merchant-producers with raw material and orders. This group employs the designers, work-shop owners, delivers raw material to the workshops and sells the production to the merchants. Workshop owners produce up to the orders received, without being able to master neither design, nor supply or sale, be it on the level of goods or prices. The fourth group is the most numerous people, the silk workers employed and paid by the workshop owners. The latter two groups where entirely depended on the two groups on top of the pyramid. Further elements of this vertical cluster organization were floriculturists, color-producers, engravers, printers, and still further specialists, all of them contributing to the functioning of this industrial sector.

5. Textile design entrepreneurship in Lyon

The textile design entrepreneurship activities were an integrated part of the Lyon silk sector, but with a certain independence from its core activities in silk industry. The designers occupied a status of highly skilled independent workers, rather artists, employed by the merchant-producers, but often held themselves parts of the share capital of these establishments. The designs, once they were accepted by the client, became part of the property of the latter. Insofar, designers were also dependent participants in the system. Nevertheless they insured the success of the entire sector by delivering designs which with time created an essential part of the reputation of the Lyon fabric system (Bonetto *et al.* 2014).

The design sector, up to the results of interviews of two of the last still exercising members of this profession, was a very dynamic part of the system. In the 1970 it was itself structured in form of a cluster organization with about 60 studios of which an important proportion was located in a very narrow sector of down-town Lyon. Most of the studios were very small entities, headed by the owner – rarely a designer himself, rather a commerce-focused professional. Due to French labor regulations created in 1936, re-established in 1946, an enterprise with more than 10 employees needs to accept the election of personnel's delegate representing the employees in front of the employer and being equipped with granted rights of information and expression of proposals. In order to avoid such forms of rights for the personnel, many employers, not only in the textile sector, voluntarily stopped hiring before their enterprise reached the relevant size. Therefore a lot of studios occupied personal, partly under employee status, partly under independent worker-status. Under the direction of the owner the head of the workshop, mostly a former designer himself, called "chef d'atelier", coordinated and managed the work of the designers and they were responsible for the collections of the studios. Even if the textile design was limited by standards forms the driving force in the studios was creativity on a high competitive level and each studio had their own style, brand and market niche and it was possible to differentiate between the studios.

The close neighborhood of many of these design studios allowed a very fluid functioning of this particular labor market. Designers easily quit one studio to be hired directly by another one. Most of the studios had their particular style or sectorial specialization and even though competition existed, the market was large enough for successful doing business of all of them. The high level of labor fluidity insured mutual inspiration. Nevertheless the level of individualism and competition between the designers of a studio was high, due to the sales-related model of remuneration. An employed designer received a part of his salary as a determined, fix amount, generally close to the minimum wage. As a counterpart he had to successfully produce a given number of designs over a month. Any sold design above this minimum level reported to him 1/3 of a determined value. Freelance designers received no fix remuneration but 50% of a determined value per design they produced. The designers ignored the sales price of their works.

This model contributed to the absence of organization of the work-force under the roof of trade-unions, which would have been inacceptable to the studio-owners who believed in a highly patriarchic form of management. The standing and the dynamics of the Lyon market was as strong as to attract customers from all over the world, especially United Kingdom, United States, Japan and Italy to make their commercial visits directly in the studios. Several visits in one studio per day were not exceptional. Customers took advantage from the proximity of the studios by scheduling a series of contacts and purchase meetings. Furthermore sales trips were regularly made by the studio-owners to visited customers abroad. Presentations in high class hotels in Paris and participation in trade fairs became additional occasions for sales once the process of decline had already set in. Together with the municipal administration the professional sector had set up a structured three-year training curriculum for future designers. A special "Textile High-School" (Lycée Didérot) functioned in Lyon in order to enable the sector to cope with demand. The curriculum was organized such that 50% of a pupil's time was dedicated to theoretical training in the school and 50% of the time was practical on-the-spot learning in a design studio.

6. Decline and collapse

The era of success finished in the 1970ies, when economic fundamentals changed and made clearly appear the need for reorganization and restructuration of a series of mature sectors in the developed countries, among them as one of the first the textile sector. During the early half of the 20th century, the design sector had already known a very strong evolution, leaving the initial dedication to the silk production by designing essentially for the current production of various textiles.

The starting point of the changes of the late 20th century which underwent the textile design sector was described by the interviewed designers to be the period of the petrol-shocks, symbols for the end of a 30-year-long period of growth since 1945. In parallel, several evolutions were on their way: delocalization for low-cost countries like Morocco and Turkey in the textile producing sector took place. They took off the market part of the demand for design, but despite the fact that silk production decreased in Lyon, the textile design sector in Lyon was able to continue its activities

But this new business environment for the textile designers changed the way of marketing how design samples were presented to potential customers: British designers, often trained as interns in the Lyon studios, offer showroom presentations instead of the traditional catalogues and paper-samples, Italian design studios use modern technology to offer a high quantity of design samples at lower prices. Lack of recognition of the new trends and incapacity to adopt to the new evolutions, in parallel to the shrinking market lead to price competition which attacked traditional Lyon based design studios, first those which were the most fragile ones, but more and more also the core segment of the formerly dominating Lyon cluster.

A smaller and smaller number of players left over led to a less and less fluid situation also for the designer labor market. Employment opportunities for young designers start to lack, numbers of applicants for the training center at Lycée Diderot decrease, until the decision is taken in the 1980 to stop the training curriculum. A last effort to revitalize a modernized curriculum was undertaken between 1990 and 1993 before the final abandon. Currently, up to one of the interviewed persons, only three textile design-studios are left over in Lyon, all of them exercising

in niche markets, waiting for the time to come, when retirement of the owner will definitely close the chapter of Lyon based textile design. Today, adapted to the new situation on the textile markets, these studios stripped themselves off, as far as possible, of their cost-generating structures: rather the use of free-lance cooperation than traditional employment, use of modern design technology for small, specialized market segments, as competition against larger design studios from abroad appears to be out of reach. An expressed regret is the lack of structured and durable public support for this activity; especially as far as the efforts of making the products known through participation in fares and presentations is concerned. This lacking support is described to be an additional obstacle for the surviving firms, fragile on the financial level, which can only afford with difficulties the communication and promotion costs needed to be invested to get known by potential customers.

7. Specific findings

This case study, as described in a congruent manner by two textile designers which still do exercise their profession, makes appear structures which are close to the descriptions given by Alfred Marshall on "industrial districts" and which are related in a more recent version to the definition of clusters (Marshall 1920; Porter 2000). The Lyon textile sector during the era of its apogee was maybe even closer to the Italian version of the industrial districts as put into the light by Giacomo Becattini (2002). When writing "However, one thing should be quite clear: the notion of the division of labor is here not referred to a single company, as in Smith's example of the needle factory, nor to the market in its abstract totality, as in Young's model, but to an intermediate, meso-economic entity that perhaps lacks a legally recognized status and aggregates and disaggregates in its different manifestations — territorial and otherwise — in response to overall long run changes in socio-economic relationships at both the local and global level", the author seems to underline what happened to the former Lyon based textile design activity, organically appeared on the market together with the silk and textile cluster : the structures of this industry became global, they lost their identification with a given territory, but still do exist, elsewhere, differently structured and organized, but still capable to deliver a given product : textiles in various forms and qualities, for various uses.

Anne-Marie Wiederkehr (1981) showed in her analysis of the manual for silk designers "Le dessinateur pour les fabriques d'étoffes d'or, d'argent et de soie" of Nicolas Joubert de l'Hiberderie (published in 1765), that already during the 18th century clear and precise knowledge and recognition existed about the interaction of markets and competitors on these markets (Miller 2004). People, 250 years ago were precisely aware about the risks and opportunities of internationalization of economic activities and the issues of communication or secrecy on data and information about activities. The question of innovation opportunities through open information existed just at it is a very contemporary issue of the early 21st century.

Anne Marie Wiederkehr writes "… les tenants de l'ordre établi qui veulent le maintien de leurs privilèges (Noblesse, Haut-Clergé) ou de leurs monopoles (Corporations), jugent les diffusions des idées nouvelles et des progress technologiques dangereuses". (The defenders of the established order aiming at the preservation of their privileges (nobility, high clergy) or their monopolies (guilds) consider spread of new ideas and technological progress to be dangerous). So also cultural and social attitudes of the stakeholders of the textile design sector led to a lack of attention for future orientated activity, which accelerated the decline of the studios due to loosing competitiveness compared to other textile design destinations. Consequently, even in creative SME sector it must be understood that constant attention and search for possibilities of improvement of products and services as well as inner structures combined with a focus on customer needs have to be considered to be priority goals for sustainable entrepreneurship.

An important observation in the case study is that the actors in the textile design sector enjoyed a professional education which was based on an apprenticeship in a design studio and on professional training at a textile training centres. Consequently the textile designers in Lyon did not visit a business school and their education and knowledge in management and business administration was very limited, especially in the fields of marketing, innovation and business strategy. In the interviews it was conjectured that the lack of deeper management knowledge together with an underdeveloped awareness about sustainability issues represented one important reason for the quick collapse of the textile design sector in Lyon.

Finally it has to be mentioned that parts of the Lyon silk cluster survived by innovating or converging their initial products and by targeting to other markets. One import example represents the chemical industry in Lyon which contributed heavily to the silk cluster development with the production of colours and which nowadays still exists as chemical industry with a focus on pharmaceuticals.

Conclusions

The Lyon silk cluster followed in its development life-cycle patterns like every other cluster, consisting of phases of growth, saturation and decline. Over centuries the Lyon silk industry was an economic, sustainable endeavor for the Lyon region generating wealth and prosperity for several generations of workers. The decline and collapse of this cluster happened mainly within the last 50 years. First the silk production in Lyon region went down and moved to other destinations and later related cluster businesses, especially the textile design sector, nearly fully disappeared in Lyon.

The textile design sector represented a cornerstone of the outstanding global position of the Lyon silk cluster for a long time and it became a world leading place in creative business even after the decline of silk production in Lyon region. The case study gave an inside view into the development of the Lyon silk cluster and revealed reasons for its unsustainability and final collapse.

According to Pascual *et al.* (2011) sustainable development is a process that requires incremental and continuous improvement in order to fulfil the needs of current and future generations and to ensure that future generations will have the capability to enjoy a quality of life. Important reasons, especially for the decline of the textile design sector, can be found in cultural specifics, the entrepreneurial environment, the refuse to respond to technological and organizational innovations, and an underdeveloped awareness in strategic management issues.

The indifference towards open innovation models and the existence of complacence in large parts of the owners of the textile design studios avoided necessary future investments in innovations and educational institutions so that the development of the whole sector became unsustainable so that the textile design moved to other destinations and marginalized the Lyon textile design sector to an unimportant size. The decline process was accompanied by a low level of education of management and business knowledge in the textile design sector.

References:

Anselin, L.; Varga, A.; Acs, Z. 1997. Local geographic spillovers between university research and high technology innovations, *Journal of Urban Economics* 42: 422–448.

Bartl, M. 2008. White Paper: Open Innovation! Available on the Internet: <http://hyve.de/cms/upload/f_1599_WhitePaper_OpenInnovation.pdf>. [Accessed: 1 March 2014]

Becattini, G. 2002. From Marshall's to the Italian "Industrial Districts, in Quadrio Curzio, A.; Fortis, M. (Eds.). *A Brief Critical Reconstruction, Complexity and Industrial Clusters Contributions to Economics*, 83–106.

Benkenstein, M. 1998. Besonderheiten des Innovationsmanagements in Dienstleistungsunternehmen [Special features of innovation management in service companies], in Bruhn, M.; Meffert, H. (Ed.). *Handbuch Dienstleistungsmanagement*. Gabler: Wiesbaden, 689–703.

Bileišis, M. 2014. Public Sector Control as a Factor in Entrepreneurial Policy: the Case of Lithuania, *Entrepreneurship and Sustainability Issues* 1(3): 151–161. DOI: http://dx.doi.org/10.9770/jesi.2014.1.3(4)

Bluhm, K. 2008. *Fach- und Führungskräfte in mittelständischen Unternehmen* [Professionals and managers in medium-sized companies]. Institut für Soziologie der Universität Jena.

Bonetto, P.; Hofmann, B.; Prause, G. 2014. How Lyon lost its textile design sector - A case study about unsustainable entrepreneurship. *Proceedings of the 13th International Entrepreneurship Forum Conference: "Entrepreneurship and Development: The Idea of Inclusive Opportunity Creation",* 31 July – 2 August, 2014 Bogota, Colombia.

Boschma, R. A.; Ter Wal, A. L. J. 2007. Knowledge networks and innovative performance in an industrial district: The case of a footwear district in the South of Italy, *Industry and Innovation* 14(2): 177–199.

Breschi, S.; Malerba, F.; Orsenigo, L. 2000. Technological regimes and Schumpeterian patterns of innovation, *The Economic Journal* 110 (463): 388–410.

Brown, T. 2008. Design Thinking, *Harvard Business Review* June: 1–10.

Chesbrough, H. 2003. *Open Innovation: The New Imperative for Creating and Profiting from Technology.* Boston: Harvard Business School Press.

Classen, N.; Carree, M.; Van Gils, A.; Peters, B. 2013. *Innovation in Family and Non-Family SMEs: An Exploratory Analysis.* Small Business Economics.

Cohen. B.; Winn, M. I. 2007. Market imperfections, opportunity, and sustainable entrepreneurship, *Journal of Business Venturing* 22(1): 29–49.

Cooke, P.; Morgan, K. 1998. *The Associational Economy: Firms, Regions, and Innovation*. Oxford University Press.

De Alencar, L.M.; Almeida, H.N. 2013. Economic viability and sustainability of solidarity economy enterprises: a case study on the technological incubator of popular cooperatives of the Catholic University of Salvador, *Entrepreneurship and Sustainability Issues* 1(2): 92–98. DOI: http://dx.doi.org/10.9770/jesi.2013.1.2(3)

Drucker, F. 1985. *Innovation and entrepreneurship: Practice and Principles.* Harper & Row.

Dzemyda, I.; Raudeliūnienė, J. 2014. Sustainable youth entrepreneurship in conditions of global economy toward energy security, *Entrepreneurship and Sustainability Issues* 1(4): 247–256. DOI: http://dx.doi.org/10.9770/jesi.2014.1.4(7)

Figurska, I. 2014.Sustainable entrepreneurship: localization, acquiring and use of knowledge sources in competitive organization, *Entrepreneurship and Sustainability Issues* 1(4): 210–222. DOI: http://dx.doi.org/10.9770/jesi.2014.1.4(3)

Florida, R. 2002. *The Rise of the Creative Class...and how it´s transforming work, leisure, community and everyday life*. Basic Books.

Foray, D.; David P. A.; Hall, B. H. 2011. Smart specialization from academic idea to political instrument, the surprising career of a concept and the difficulties involved in its implementation. Management of technology & entrepreneurship institute. MTEI-working_paper-2011-001.

Fujita, M.; Krugman, P. 2004. The new economy geography: Past, present and the future, *Papers in Regional Science* 83(1): 139–164.

Gerlach, A. 2003. Sustainable entrepreneurship and innovation, in University of Leads, *2003 Corporate Social Responsibility and Environmental Management Conference*, 30 June –1 July 2003. Leads: UK, 101–110.

Gertler, M.S.; Levitte, Y.M. 2005. Local nodes in global networks: The geography of knowledge flows in biotechnology innovation, *Industry and Innovation* 12(4): 487–507.

Gilsing, V.; Bekkers, R.; Bodas Freitas, I.; van der Steen, M. 2011. Differences in technology transfer between science-based and development-based industries, *Transfer mechanisms and barriers* 31: 638–647.

Giriūnienė, G. 2013. Public sector's subsidies to business – suitability valuation of labor market support measures, *Entrepreneurship and Sustainability Issues* 1(1): 37–44. DOI: http://dx.doi.org/10.9770/jesi.2013.1.1(4)

Goddard, J. 2000. *The Response of HEIs to Regional Needs*. OECD, Paris.

Hayek, F. A. 2002. Competition as a Discovery Procedure, *The Quarterly Journal of Austrian Economics* 5(3): 9–23.

Išoraitė, M. 2013. Motivation tools though lenses of prospective employees, *Entrepreneurship and Sustainability Issues* 1(2): 116–123. DOI: http://dx.doi.org/10.9770/jesi.2013.1.2(6)

Išoratė, M.; Steiblienė, L.; Mečėjienė, G. 2014. If obtained professional competences are suitable for sustainable entrepreneurship: case of Vilnius University of Applied Sciences, *Entrepreneurship and Sustainability Issues* 1(4): 239–246. DOI: http://dx.doi.org/10.9770/jesi.2014.1.4(6)

Jaffe, A.; Trajtenberg, M.; Henderson, R. 1993. Geographic Localization of Knowledge Spillovers as Evidenced by Patent Citations, *The Quarterly Journal of Economics* 108(3): 577–598.

Korsakienė, R. 2013. Internationalization of construction firms: what strategy do they follow? *Entrepreneurship and Sustainability Issues* 1(2): 99–107. DOI: http://dx.doi.org/10.9770/jesi.2013.1.2(4)

Korsakienė, R.; Tvaronavičienė, M. 2014. Processes of economic development: case of Lithuanian real estate sector, *Entrepreneurship and Sustainability Issues* 1(3): 162–172. DOI: http//dx.doi.org/10.9770/jesi.2014.1.3(5)

Krugman, P. 1991. Increasing returns and economic geography, *Journal of Political Economy* 99(3): 483–499.

Laužikas, M.;Mokšeckienė. 2013. The role of creativity in sustainable business, *Entrepreneurship and Sustainability Issues* 1(1): 10–22. DOI: http://dx.doi.org/10.9770/jesi.2013.1(2)

Leroudier, E. 1908. *Les dessinateurs et la soierie lyonnaise au XVIIIe siècle* [The designers and the Lyon silk in the eighteenth century]. Revue d'Histoire de Lyons.

Lindqvist, G.; Ketels, K.; Sölvell, Ö. 2013. *The Cluster Initiative Greenbook 2.0.* Ivory Tower Publishers, Stockholm.

Litvaj, I.; Poniščiaková, O. 2014. Entrepreneurship and quality management, *Entrepreneurship and Sustainability Issues* 1(4): 204–209. DOI: http://dx.doi.org/10.9770/jesi.2014.1.4(2)

Marshall, A. 1920. *Principles of Economics (Revised Edition).* London: Macmillan; reprinted by Prometheus Books. ISBN 1-57392-140-8.

Marsili, O. 2001. *The Anatomy and Evolution of Industries: Technical Change and Industrial Dynamics*. Edward Elgar Publishing Ltd., Cheltenham.

Meier zu Köcker, G. 2008. *Clusters in Germany.* Institute for Innovation and Technology.

Miller, L.E. 2004. Representing silk design: Nicholas Joubert de L'Hiberderie and Le dessinateur pour les etoffes d'or, d'argent et de soie (Paris, 1765), *Journal of Design History* 17(1): 29–53.

Pascual, O.; van Klink, A.; Rozo Grisales, J. 2011. *Create Impact! Handbook for sustainable Entrepreneurship.* Wuppertal Institute Collaborating Centre on Sustainable Consumption and Production (CSCP).

Porter, M. 2000. Location, Competition and Economic Development: Local Networks in a Global Economy, *Economic Development Quarterly* 14(1):15–34.

Porter, M. 1998. Clusters and the new economics of competition, *Harvard Business Review* 76: 77–90.

Rauch, A.; Frese, M.; Wang, Z-M.; Unger, J.; Lozada, M.; Kupcha, V.; Spirina, T. 2013. National culture and cultural orientations of owners affecting the innovation--growth relationship in five countries, *Entrepreneurship & Regional Development* 25(9-10): 732–755.

Schmitt-Grohe, J. 1972. *Produktinnovation. Verfahren und Organisation der Neuproduktplanung* [Product innovation. Procedures and organization of new product planning]. Wiesbaden.

Schumpeter, J. 1911. Theorie der wirtschaftlichen Entwicklung: eine Untersuchung über Unternehmergewinn [Theory of economic development: a study of entrepreneurial profit]. Kapital, Kredit, Zins und den Konjunkturzyklus.

Sölvell, Ö. 2008. *Clusters - Balancing evolutionary and constructive forces.* Ivory Tower Publishers, Stockholm.

Tvaronavičienė, M. 2014. If industrial sector development is sustainable: Lithuania compared to the EU, *Entrepreneurship and Sustainability Issues* 1(3): 134–142. DOI: http://dx.doi.org/10.9770/jesi.2014.1.3(2)

Wahl, M. 2014. Sustainable Entrepreneurship: The Wolf ButterBack Case, *Entrepreneurship and Sustainability Issues* 1(4): 223–229. DOI: http://dx.doi.org/10.9770/jesi.2014.1.4(4)

Wahl, M.; Prause, G. 2013. Toward understanding resources, competencies, and capabilities: business model generation approach, *Entrepreneurship and Sustainability Issues* 1(2): 67–80. DOI: http://dx.doi.org/10.9770/jesi.2013.1.2(1)

Wiederkehr, A. 1981. Le dessinateur pour les étoffes d'or, d'argent et de soie [The designer fabrics...]. PhD thesis. Université de Lyons II.

Young, W.; Tilley, F. 2006. Can business move beyond efficiency? The shift toward efficiency and equity in the corporate sustainability debate', *Business Strategy and the Environment* 15(6): 402–415.

Zhao, F. 2005. Exploring the synergy between entrepreneurship and innovation, *International Journal of Entrepreneurial Behaviour & Research* 11: 25–41.

Pierre BONETTO is Textile Design Entrepreneur. Research interests: textile-design, sustainable entrepreneurship, innovation.

Bernd HOFMANN is Associate Professor at Claude Bernard University of Lyon. Research interests: sustainable entrepreneurship, innovation, management of enterprises.

Gunnar PRAUSE is Professor for International Business in Tallinn School of Economics and Business Administration (TSEBA) of Tallinn University of Technology. Research interests: International Business, Entrepreneurship & SME – Management, Logistics, Innovation. He is Board Member of the Centre for Business Research and Development at the Department of Business Administration of TSEBA, Board Member of the Institute of Cooperative Studies at Humboldt University Berlin, Board Member of Baltic China Science Park Network. He is author of more than 100 scientific articles.

MODEL OF MOTIVATING LINKED-UP WITH EDUCATION

Lenka Tarábková

Faculty of Management Science and Informatics, Department of Management Theories
Univerzitná 8215/1, 010 26 Žilina

E-mail: Lenka.Tarabkova@fri.uniza.sk

Abstract. Investing in people and principally in their skills and knowledge is becoming the fundamental prerequisite for gaining sustainable and strategic competitiveness at the market. The article deals with the problematic of business education, which in much foreign literature is predominantly known as workplace learning. This problematic is being studied in the context of three constructs – motivation, education and feedback. The value of this article is that it proposes the model of motivating of employees which is linked-up with educational process. The article is divided into two main parts, the first part deals with the literature review and the second one describes the proposed model.

Keywords: motivation, motivating, education, learning, model

1. Introduction

Businesses face a permanent changing environment due to new challenges such as globalization, economic pressures, and the changing nature of work (Šabasevičienė, Grybaitė 2014; Tvaronavičienė 2014; Prause, Hunke 2014). To be successful, employees must learn to cope with such changes (Wang *et al.* 2011: 260; Garškaitė-Milvydienė 2014; Litvaj, Poniščiaková 2014; Dzemyda, Raudeliūnienė 2014). Many authors highlight the importance of employees' knowledge and skills in the effort of managers to make the business competitive not only at local marketplace (Lengnick *et al.* 2003; Carneiro 2000; Figurska 2014; Išoraitė 2013; Laužikas, Mokšeckienė 2013). The paradigm of knowledge and its role in competitiveness enhancement is also dealt on national or supranational level (Sum, Jessop 2013). Moreover, the way the entire business learns can be instrumental in its innovation and profitability (Vaughan 2008; Išoraitė *et al.* 2014). If we want to support employees to enhance their ability to react on changes, the business has to create and foster appropriate environment regarding three crucial constructs, i.e. motivation, education and feedback which are closely described in the article.

1.1 Motivation

The importance of employee motivation to perform well in tasks is widely recognized (Chong, Roopnarain 2014: 229). There is an extensive literature on motivation. It has been defined as: *the psychological process that gives behaviour purpose and direction* (Kreitner 1995); *an internal drive to satisfy an unsatisfied need* (Higgins 1994);

and all those inner-striving conditions described as wishes, desires, drives, etc. (Gibson *et al.* 1994). To put it simply, motivation is a force that causes a person to behave in a certain way.

Generally, there are two types of motivation which are important to distinguish, intrinsic and extrinsic. *Intrinsic motivation* is defined as the doing of an activity for its inherent satisfactions rather than for some separable consequence. When intrinsically motivated a person is moved to act for the fun or challenge entailed rather than because of external prods, pressures, or rewards. On the other hand, *extrinsic motivation* is a construct that pertains whenever an activity is done in order to attain some separable outcome (Ryan, Deci 2000: 56–60). When talking about motivation at the workplace, extrinsic motivation becomes intentional but still positive motivating of employees by their managers in order to perform according to set standards or even exceed them. It is necessary to point out that motivating (an intentional intervention into inner motives of an employee) is not stimulating (such an intentional intervention which does not try to start up inner motives, just to make an employee comply with given tasks).

1.2 Education and workplace learning

Not only businesses but also our society needs people with high level of knowledge, skills and abilities. Learning and development process is defined as the process of ensuring that the business has the knowledgeable, skilled and engaged employees it needs (Armstrong 2012: 274). There are several terms which are often interchanged in the meaning – education, training, and learning as can be seen from next definitions:
- Education also known as Training and Development, Human Resource Development, Corporate Training, and Work and Learning – can be defined as the means, processes, and activities in the workplace by which employees learn basic skills, high technology, and management practise that can be immediately applied to their jobs, duties, and roles in the business. Indeed, to compete and keep up with changes, businesses require effective ways to update their workforce's skills and knowledge (Wang *et al.* 2011: 261).
- Education is seen as education in school, also called schooling or vocational educational learning. It is more comprehensive and extended. Training, also called workplace learning, is more specific and bounded, is aimed at creating a competence development in specific practise (Cairns and Malloch 2010: 8–9).
- Learning should be distinguished from training. Learning is the process by which a person constructs new knowledge, skills and capabilities; whereas training is one of several responses a business can undertake to promote learning. Learning is what individuals do; training is what businesses do to individuals (Armstrong 2012: 274).
- Workplace learning has a broader project and potential to link development of the individual with development of the organisation or business, through an emphasis on sustained development and learning processes as well as learning outcomes (Vaughan 2008).
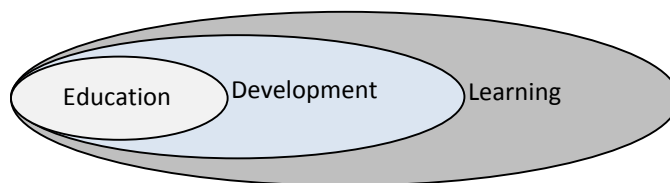
Fig.1. Relationship among education, development and learning

Source: author

In this article as is understood in many Slovak and Czech literatures, the business education is referred as a systematic process organized by the business aiming at acquiring new and developing current level of knowledge, skills and abilities in order to better perform at given tasks. The result of business education is a reduction of gap in job performance between what exists and what is needed. Development means acquiring new knowledge and attitudes which are required in terms of long-term development of individual´s career and business goals. Learning

as highest stage of education means mainly experience and practise, it cannot be designed in advance and is rather a matter of individual or personal change. This can be shown in Figure 1.

1.3. Importance of feedback on learning

There are many articles or books which operate with the word feedback. Every day we use it unconsciously without questioning the meaning or the purpose of it. Broadly speaking, feedback is understood as *the return of information about the result of a process or an activity, an evaluative response*[1] to a person from an agent (teacher, partner, co-worker, supervisor, computer programme, etc.). Feedback has considerable importance in learning (Bosc-Mine 2014; Boero, Novarese 2012; Race 2001). If the person accepts and considers the received feedback, such information can be used to modify their characteristics and behaviour. Not only does feedback help learners understand the subject being studied, it helps them quickly master new knowledge. Furthermore, it gives then clear guidance on how to improve their learning[2].

2. Model of motivating linked-up with education of employees

The basic prerequisite of this article is the fact that there is a strong linkage between motivating and educating of employees. In practise there can be two types of interaction between motivating and education. First, the education itself can be comprehended as the motivational tool when employees perceive opportunity to develop or deepen their skills and knowledge strongly motivationally. Second, to make the most of business education it is necessary to motivate employees, therefore, to elaborate a motivational programme for efficient education and knowledge transfer into practise.

As a result of this prerequisite, the model where motivating and education are interconnected is proposed (Figure 2). The mutual interconnection brings a synergic effect which could result in higher commitment of employees. If personal and professional development of employees is supported, easier, faster and above all for longer time period it will result in profounder identification with business goals and willingness to contribute to market success of the business.

Any concept for work with human potential of the business has to stem from the *vision, mission, goals* and *business strategy* as well as particular SBU´s goals and strategies. An essential forming part of the concept is the *philosophy* and *culture,* which are closely linked with *values* and *principles* within the business. These are the premise for strategy and policy of human potential management and development. In general, the strategy of development of employees can be described as the strategy that expresses the capabilities, skills and knowledge which are required and how to develop these in order to achieve strategic market success. Based on this strategy, the *business motivational programme* can be drafted. Motivational programme (or incentive scheme) is an internal document which obtains a set of goals, criterions, tools, attitudes and procedures designed to encourage commitment of employees.

The first step in the model is an ***analysis of needs and motives***, which based on motivational and performance evaluation interviews or questionnaire survey (or other methods common in the business) is investigating the state of the knowledge, abilities, interests and work attitude and motivational profile of an employee, i.e. what motives to highly perform at work and self-educate he or she has got. To obtain truly complex picture it is necessary to investigate job satisfaction (work environment, interpersonal relationships and communication, remuneration, performance evaluation, etc.). Comprehensive analysis of needs helps document actual deficiencies and problems. A thorough analysis of insufficient gap between required job performance and the real one is a starting point for business education planning.

---

[1] www.thefreedictionary.com
[2] University of Readining.

VISSION, MISSION, GOALS AND BUSINESS STRATEGY

FHILOSOPHY AND CULTURE   VALUES AND PRINCIPLES

STRATEGY OF HUMAN POTENTIAL MANAGEMENT AND DEVELOPMENT

BUSINESS MOTIVATIONAL PROGRAMME

ANALYSIS OF NEEDS AND MOTIVES

Motivation interview
Performance evaluation interview
Questionnaire survey

- employee´s motivational profile,
- job satisfaction,
- job performance.

GOALS OF BUSINESS EDUCATION

Business resources and limitations
Situation at market
Analysis of previous business education programmes

- what is desired to achieve,
- skills which are needed to be developed or obtained,
- general contribution of education.

EDUCATIONAL PROGRAMME

Educational institutions references

- methods and forms of business education,
- lecturers and participants of business education,
- criterions of education evaluation.

MOTIVATION AND MOTIVES

Managers´attitude toward employees
Strategy of motivating to learn
Motivational tools

- meaning and contribution of education,
- goals of education,
- enthusiasm and commitment.

EXECUTION

Strengthen positive experience
Discussion after ending activities
Active involvement of employees

- Execution of educational activities,
- checking of schedules, plans and budgets.

EVALUATION

Feedback on learning
Transfer into practise

- opinions and satisfaction regarding educational activity,
- increase in knowledge and skills,
- change in work behaviour,
- results of education,.

Process feedback

Fig.2. Model of motivating linked-up with education

Source: author

The second step is setting the ***goals of business education*** where it is necessary to identify and specify requirements regarding education, i. e. what is desired to achieve, which skills and knowledge are asked to be deepen or obtained. It is important to emphasis the general contribution of education in long-term point of view to all employees. Valuable source of information for this step is a scrutiny of previous educational programmes.

In decision making it is important to take into account business resources and limitations (human, financial, physical, intangible, time), the situation at market (the education should reflect the latest or coming changes) as well as competitors´ steps.

The subsequent step is elaboration of an *educational programme* which comprises decision making about methods, forms, schedules, lecturers and participants of educational activities. The key role of the programme is to define basic criterions against which effectiveness and outcomes of particular educational activities will be evaluated. The selection of educational institution carrying out the educational programme can be done on the basis of looking for references on educational institutions and what added value they can provide.

Motivation and motives step represents the crucial one regarding motivational-educational effort of every business since it creates the opportunity to emphasis the strategic meaning and contribution of the education and explicitly refer to job position (how education will influence their performance). The better the employees are informed about goals of education, the more they are involved and willing to transfer new knowledge into practise. Within this step, managers´ attitude is crucial as well as their motivation to motivate subordinates. Based on motivation strategy and knowledge of employees´ motivational profile, the proper motivational tools in the realm of communication (acknowledgement, praise and empathy), leading (asking for opinions, discussing, providing immediate feedback and empowerment) and employee evaluation (openness, emphasising of strengths) can be used in everyday practise.

The fifth step represents the *execution* of education itself. Among many available methods used in educational process, business should deploy on-the-job methods such as coaching and mentoring. In order to strengthen the experience, it is necessary to continuously positively engage employees into activities even after ending education, e.g. planning or modifying forms of next educational activities. Furthermore, participants should be allowed to meet and discuss what they have taught in form of discussions, chats, communities of practise, knowledge cafes[3] (Leask 2008).

The last step, *evaluation* as a systematic appraisal of the quality of teaching and learning in order to improve future education*,* provides feedback on the effectiveness of educational programme. Unfortunately, many companies are reluctant to measure or evaluate the effectiveness of education for various reasons (difficulties to set proper measures, lack of knowledge how to evaluate, etc.). Nevertheless, evaluating the process and seeing the real results of education in form of examples from practise can provide the proof of rightfulness of education (employees can experience so-called "click" effect of the purpose)[4]. Evaluation needs to cover four realms: *reactions* (mainly feelings, ideas, satisfaction with the content, methods, lecturers, etc.), *learning* (the amount of new knowledge and skills learnt), *change in behaviour* (which learnt knowledge was transferred into practise) and *results* (the impact of education on corporate performance measured on the base of key performance indicators). Generally, evaluation embodies a feedback on learning which squares the quality of future learning process of the employees.

Finally, the very last part of the model is *process feedback* which retrospectively tracks possible resources of mistakes or errors which could occurred somewhere along the whole process starting with evaluation step and ending with the definition of vision, mission, goals and business strategy. It checks whether the error was caused during execution of education, whether participants were motivated properly, whether correct educational goals were specified or whether defined needs of education and development were accurate.

Conclusions

So the world of work is becoming more complex and uncertain as old categories and rapid change make it harder to predict occupational futures and very specific skills needs. Everyone needs the capacity to adapt, change and innovate. Workplace learning becomes a tool through which businesses may gain competitive advantage

---

[3] A group of people having an open, creative conversation in an informal environment on a topic of mutual interest
[4] Click effect – when a person suddenly becomes aware of something

(recruitment and retention of workers, development of innovative practices, and the production of new knowledge) (Vaughan 2008).

According to new statistics released by the CIPD the businesses are waking up to the changes in the world of work by aligning learning and developing initiatives to business strategy. Reflecting the increasing emphasis on evaluating business education, the survey revealed that the number of businesses measuring return on investment from development practices has increased from 26% to 48% (CIPD 2014).

Undoubtedly, there is a positive strong relationship between business education and the performance of the business. Therefore further research in area of education should focus on ascertaining factors which constitute successful learning and knowledge transfer into practise in terms of linking results of education with performance of the business.

References

Armstrong, M. 2012. *Armstrong's Handbook of Human Resource Management Practice*. 12th edition. Kogan Page.

Bosc-Mine, Ch. 2014. Properties and functions of feedback in learning, *Annee Psychologique* 114(2): 315–353.

Boero, R.; Novarese, M. 2012. Feedback and Learning, in Seel, N.M. (Ed.). *Encyclopedia of the Sciences of Learning,* 1282–1285. DOI: 10.1007/978-1-4419-1428-6_939

Cairns, L.; Malloch, M. 2011. Theories of Work, Place and Learning: New Directions, in Malloch, M.; Cairns, L.; Evans, K.; O'Connor, B. (Eds.). *The international handbook of workplace learning*, 3–16. London: Sage.

Carneiro, A. 2000. How does knowledge management influence innovation and competitiveness? *Journal of Knowledge Management* 4(2): 87–98.

Chong, L. M.; Roopnarain, K. 2014. The effects of nonfinancial and financial measures on employee motivation to participate in target setting, *The British Accounting Review* (in Press).

CIPD: Learning and development becomes more business focused. 2014. Available on the Internet: <http://www.cipd.co.uk/pressoffice/press-releases/learning-development-business-focused-cipd-300414.aspx)>.

Dzemyda, I.; Raudeliūnienė, J. 2014. Sustainable youth entrepreneurship in conditions of global economy toward energy security, *Entrepreneurship and Sustainability Issues* 1(4): 247–256. DOI: http://dx.doi.org/10.9770/jesi.2014.1.4(7)

Garškaitė-Milvydienė, K. 2014. Anti-crisis management of enterprises and possibilities of overcoming their critical condition, *Journal of Entrepreneurship and Sustainability Issues* 1(4): 187–203. DOI: http://dx.doi.org/10.9770/jesi.2014.1.4(1)

Higgins, J. M.: 1994. *The management challenge.* 2nd edition. New York: Macmillan.

Išoraitė, M. 2013. Motivation tools though lenses of prospective employees, *Entrepreneurship and Sustainability Issues* 1(2): 116–123. DOI: http://dx.doi.org/10.9770/jesi.2013.1.2(6)

Išoraitė, M.; Steiblienė, L.; Mečėjienė, G. 2014. If obtained professional competences are suitable for sustainable entrepreneurship: case of Vilnius University of Applied Sciences, *Entrepreneurship and Sustainability Issues* 1(4): 239–246. DOI: http://dx.doi.org/10.9770/jesi.2014.1.4(6)

Figurska, I. 2014. Sustainable entrepreneurship: localization, acquiring and use of knowledge sources in competitive organization, *Entrepreneurship and Sustainability Issues* 1(4): 210–222. DOI: http://dx.doi.org/10.9770/jesi.2014.1.4(3)

Gibson, J. L.; Ivancevich, J. M.; Donnelly, J. H. 1994. *Organizations: Behavior, structure, processes.* 8th edition. Homewood, IL: Irwin.

Kreitner, R. 1995. *Management.* 6th edition. Boston: Houghton Mifflin.

Laužikas, M.; Mokšeckienė. 2013. The role of creativity in sustainable business, *Entrepreneurship and Sustainability Issues* 1(1): 10–22. DOI: http://dx.doi.org/10.9770/jesi.2013.1(2)

Leask, M.; Caren, L.; Milner, T.; Norton, M.; Rathod, D. 2008. Knowledge management tools and techniques: helping you access the right knowledge at the right time. Improvement and development agency for local government. Available on the Internet: <http://www.idea.gov.uk/idk/aio/8595069>.

Lengnick, H.; Lengnick-Halll, C. 2003. *Human Resource Management in the Knowledge Economy: New Challenges, New Roles, New Capabilities*. Berrett-Koehler Publishers.

Litvaj, I.; Poniščiaková, O. 2014. Entrepreneurship and quality management, *Entrepreneurship and Sustainability Issues* 1(4): 204–209. DOI: http://dx.doi.org/10.9770/jesi.2014.1.4(2)

Prause, G.; Hunke, K. 2014. Sustainable entrepreneurship along green corridor, *Entrepreneurship and Sustainability Issues* 1(3): 124–133. DOI: http://dx.doi.org/10.9770/jesi.2014.1.3(1)

Race, P.: 2001. *Using feedback to help students learn.* The Higher Education Academy.

Ryan, R. M.; Deci, E. 2000. Intrinsic and Extrinsic Motivations: Classic Definitions and New Directions, *Contemporary Educational Psychology* 25: 54–67. DOI: 10.1006/ceps.1999.1020

Šabasevičienė, V.; Grybaitė, V. 2014.Main foreign direct investment factors as precondition of sustainable entrepreneurship: evidence from Lithuania, Central and Eastern Europe, *Entrepreneurship and Sustainability Issues* 1(4): 230–238. DOI: http://dx.doi.org/10.9770/jesi.2014.1.4(5)

Sum, N.; Jessop, B. 2013. Competitiveness, the knowledge-based economy and higher education, *Journal of the Knowledge Economy* 4(1): 24–44.

Tvaronavičienė, M. 2014. If industrial sector development is sustainable: Lithuania compared to the EU, *Entrepreneurship and Sustainability Issues* 1(3):134–142. DOI: http://dx.doi.org/10.9770/jesi.2014.1.3(2)

Vaughan, K. 2008. Workplace learning: a literature review. Competenz. Available on the Internet: <https://akoaotearoa.ac.nz/download/ng/file/group-189/n1575-workplace-learning-a-literature-review.pdf>.

Wang, M.; Vogel, D.; Ran, W. 2011. Creating a performance-oriented e-learning environment: A design science approach, *Elsevier* 48(7): 260–269. DOI:10.1016/j.im.2011.06.003

University of Readining: Why is learning important? 2014. Available on the Internet: <http://www.reading.ac.uk/internal/engageinfeedback/Whyisfeedbackimportant/efb-WhyIsFeedbackImportant.aspx>. [Accessed: 5 May 2014]

Lenka TARÁBKOVÁ is a doctoral student at Faculty of Management Science and Informatics, Department of Management theories at the University of Žilina in Žilina, Slovakia. In dissertation research she deals with the topic of Corporate Performance Management, in particular how human resources education and development influences performance of the business.

ICT AND ENTREPRENEURSHIP: SOCIAL NETWORK MARKETING

Margarita Išoraitė

The University of Applied Sciences
Didlaukio str. 49, LT-08303 Vilnius, Lithuania

E-mail:misoraite@gmail.com

Abstract. The article takles ICT impact on entrepreneurship by putting emphasis on theoretical aspects of social network, social network marketing and social marketing strategy. The social network has opened a whole New World of opportunity for even the smallest home-based business owner. There are countless numbers of new self-made millionaires that achieved their newfound success on the Internet. They started their Internet businesses from the scratches, found a niche and built their success. Developing a successful social network marketing strategy is an essential part of online successs and one of preconditions of successful entrepreneurship. In order to succeed, you must develop and implement a strategic plan that includes all of the following constituents: a great product, a website specifically designed to sell, a good marketing strategy. The paper provides overview of contemporary practices of suggest generalizations.

Keywords: ICT, entrepreneurship, social network, marketing, social network marketing

1. Introduction

ICT has become integral part of vast majority of contemporary entrepreneurial business. Sustainable entrepreneurship requires to adopt the whole range approaches towards doing business in ICT era, in order to keep its long-term viability (De Alencar, Almeida 2013; Baikovs, Zariņš 2013; Laužikas, Mokšeckienė 2013; Moskvina 2013; Wahl, Prause 2013; Raišienė, Jonušauskas 2013; Garškaitė-Milvydienė 2014; Litvaj, Poniščiaková 2014; Figurska 2014; Wahl 2014; Išoratė *et al.* 2014; Prause, Hunke 2014, Tvaronavičienė 2014; Dzemyda, Raudeliūnienė 2014). Social network marketing became integral part of ICT application. Marketing solutions, e.g. for the world's most popular social network Facebook is still quite a big sectored adherents of traditional marketing. However, a variety of opinions and assessments loose, so we decided to ask the people's thoughts untrue. Social networking has been very easy to start. This was a new toy, which existed in the possibility of reducing the distance between distant people to communicate with loved ones, find new contacts and share a range of interesting material. If the first social networks mainly attracted young people today use Facebook and middle-aged agents, senior audience, our parents, and sometimes grandparents. Companies of all sizes have realized that social networking has enormous potential because there today who can agree on the seventh of the world population. The growing popularity of social networks has proven many myths that are incorrectly treated the basic principles

of social network marketing. The task of this article is to evaluate social network marketing theoretical aspects. The object of article – social network. Research methods used in article is literature analyze, statistical data analysis.

2. Social network concept

Social networking websites are online communities of people who share interests and activities, or who are interested in exploring the interests and activities of others. They typically provide a variety of ways for users to interact, through chat, messaging, email, video, voice chat, file-sharing, blogging, and discussion groups. Facebook, Linkedin and MySpace are currently the most popular and well-known social networks in the world. The Social Network (sociology) - social structure consisting of individuals (or organizations) called "points" (called "node", ~ s), which is closely related to one or more peer relationships, such as friendship, kinship, economic relations , liking or dislike, sexual relationships, faith (religion), education, hobbies, social status. The Social Network (Internet) - an interactive structure of the Internet (website) brings together a common interest in having members of the group, which is, and which specific site content and interact with each other virtually, automated means of a specific site. Social (Internet) networks - recently actively developing part of the Internet, which can be attributed to both simple discussion forums, and the complex social and (or) commercial web projects.

Social networks - is to bring together a network willing to interact with other people, to gather and share information, grouping. Social networks can connect to a variety of topics, or groups can create them yourself. More and more Internet users across Lithuania use social networks, but the medium is still not well explored in online marketing companies. Social networks are used not only to communicate with friends, but increasingly they are used in the business. Social networks are no longer entirely new, but have been rapidly evolving in their number, form and complexity. They are new and also different to "offline network" (Drucker 1993; Achrol and Kotler 1999). Drucker (1993) described the economy of the future (or new economy) as a "network society". According Rashad Yazdanifard *et al.* (2011) the internet has radically brought the media to a global audience and it has changed the way people think, behave, react, earn and do their businesses. The methods of marketing have changed and improved gradually over the past years. In today's world, marketing has become much more sophisticated and has entered into the world of technology. Katheryn A. Andresen (2011) argue, that marketing through social networks: business considerations - from brand to privacy use of private information without express consent. Social networks created a new pool of potential customers through the sheer volume of users that voluntarily created accounts. In addition, the true social networks like Facebook, MySpace, and LinkedIn also created access points likely to be viewed frequently by users. In a 2010 survey, social network sites accounted for twelve percent of all online use.

Social networking sites also require businesses to consider issues related to security, privacy, terms of use, employee policies, and brand or other intellectual property protection. However, in addition to the concerns associated with social networks, companies have also recognized new market. Douglas (2008) state that Social marketing uses the principles and processes of commercial marketing, but not with the aim of selling products and services. Rather, the goal is to design and implement programs to promote socially beneficial behavior change. In recent years the Internet has emerged with surprisingly new possibilities for Marketers to sell their goods. The creation of social networking and microblogging sites such as MySpace, Facebook and Twitter, which allow social interaction and creation of virtual communities and hence generate a wider audience for targeting specific customer segments is one of the newest innovations in the use of the Internet and web technologies (Lemel 2010). As state Failte Ireland, National Tourism Development Authority (2012) the social networking sites such as Facebook, Twitter, MySpace, and YouTube allow them to serve nicely to the various marketing purposes and strategies. Firstly they offer cost effective means of sharing information and marketing through word of mouth and secondly they generate a large amount of data shared by millions of members everyday which is later scrutinized by the marketing forces to target their customers and improve their products and services.

Twitter. Twitter is the answer to the question 'what are you doing now'. It allows you to create a text like message of up to 140 characters through a PC or on your phone and send it to your followers. It's a mix of business and

social. You could be at home communicating what you are doing or in work. It can be a very useful tool to market your message to a lot of people at the same time very quickly. It can also be used to find out if people are actively looking for your services.

LinkedIn. LinkedIn is a business networking tool with over 150 million users worldwide and over 66% of them are considered influencers or decision makers. You create your personal profile (similar to a CV) on the site and then network with other people. One big advantage with LinkedIn is that when you connect with someone through the site they become part of your network and you are made aware of who is in their network. This can be a very powerful way of getting warm leads.

Facebook. Facebook is a social network with over 800 million users and is ideal for companies in the tourism industry to promote their business. You can create a personal profile to connect with your friends and a business page to connect with your customers. By marketing through your business page you can communicate directly to your fans of that page.

Google+. Google+ is a business social network developed by Google. It's relatively new but it's growing quite fast. You can have a personal and a business profile similar to Facebook but at the moment its' more suitable for business networking.

Blogging. A blog is basically a set of online articles normally displayed through your website. When you write an article you want people to read this content and share it out. If this doesn't happen it can still be very advantageous to keep a blog because it gives Google extra pages to index.

Social Bookmarking. A bookmark is a way of keeping track of sites you went to before that you might want to go back to. Social bookmarking allows you to share out the information on the sites you have bookmarked to your friends and of course they can do the same.

Podcasting. A podcast is a series of files, in either an audio and/or video format that can be downloaded and listened to or viewed at a later stage. For example, a radio station could produce a podcast of a show they run so that people that missed the show can come to their website and download it to listen to it at their leisure.

Table 1. Social Networks

Facebook	Twitter
Plaxo	Netlog
Xing	Badoo
Jhoos	Orkut
Myspace	Youtube
Hi5	Linkedin
CyWorld	Friendster
Google+	Wikipedia

Source: author

Video. There are many online video sites that can be used to market your business. Video can be a very effective tool and as Google really likes video it is more likely to appear in search results. YouTube is the biggest video sharing site and is also one of the biggest search engines as so many people search for content through YouTube. Çam, İşbulan (2012) stated, that social networks appear to be the most ideal environments in that they are constantly updateable, open to multithreading and give an opportunity to virtual sharing. According to Downes (2005), social networks are the conjunction of personal ties which are combined by the set of relations. People can express their daily thoughts, discuss over these thoughts and come up with new ideas on social networks. Also, they can share various photographs and videos in addition to their personal details, look for job –even, they can

find one–, and they experience the real world within the virtual environment. This, day by day, draws all the attention to this field and forms a new conceptual frame for the renewed virtual world. A good number of social communication networks have nowadays emerged (Table 1).

Numerous social communication networks have today arisen as is seen in Table 1. The reason as to why these networks have come into being is due to the fact that the internet users have been in search of new things. This search, during the time when social networks have become widespread, becomes a social habit which will day by day turn into a social network addiction.

3. Social network marketing

Waad Assaad, Jorge Marx Gómez (2011) argue, that marketing is the process, which is used to determine what products or services can be of interest to customer. Social networks help in improving the marketing of organizations to new insights about the brand, which offers innovative ways to implement the basic marketing programs, as well as new methods to win in online discussions of important business. So they can use these new opportunities, they need the tools that their companies can monitor conversations across the Internet effectively and participate. The goal is to link the success of activities in social networks with marketing programs and processes.

Marketing is becoming more significant for consumers and organizations that are actively involved in all kind of e-commerce activities. The use of social networks marketing does not only help to manage customer relationships, but also attracts valuable employees and investors into a business (Palemo 2008). Online social networks marketing has overhauled the traditional forms of marketing in such a way that millions of prospective buyers can be reached globally within a minute. Online SNM also allows small companies to market and advertise in a difficult market (Chipp, Ismail 2004).
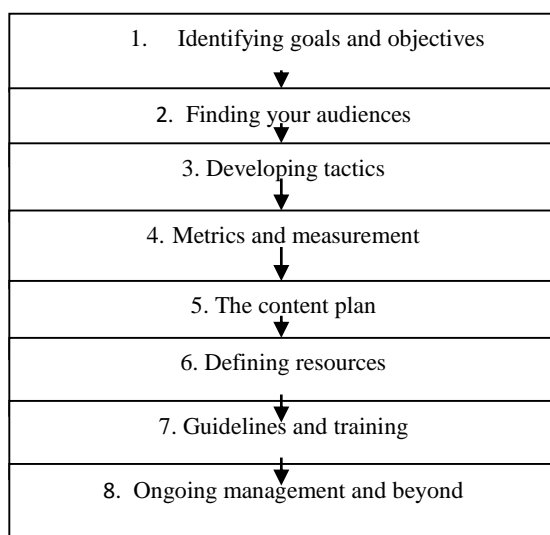
Microsoft Dynamics, CRM (2009) argue, that social networking provides marketing organizations with new insights into their brand, innovative ways to execute and track grass-roots marketing programs, and new methods to turn fragmented online conversations into actionable insights. To do so, though, organizations will need ways to monitor, understand, and participate effectively in those conversations and leverage them in conjunction with existing marketing programs and processes. Social networks play a lot of Internet marketing functions increase your website traffic to help reach the target audience of potential customers, identify new product and service opportunities to better understand the users' expectations about a product or service creates a positive image of the company . Social networks are also used in consumer brand loyalty formation. Internet social networks - it is social networks, using a website. These websites are known as social sites. Social networking websites are like online communities of users, whose members share common interests, hobbies, political viewpoint or other activities. Social websites allow people from all over the world to exchange, collect and disseminate information on various topics. Although social sites often connects people who share some common interests, but there are also such online social network that does not have to be a shared hobby or interest. These social sites as "traditional", which can become a member, each person wants. Social network advertising - is a form of online advertising, using social networking sites. Popular social sites: Facebook, MySpace and others. One of the main advantages of social networking advertising is that users can take advantage of demographic data: their interests, hobbies, political views, social status and so on.

Social network marketing is becoming more and more important part of the growing popularity of creating marketing campaigns. Advertising on the Internet for the most part moved on to social networking. Quite fast and rapid growth in this area is felt in the last five years. Therefore, this is a great opportunity to take advantage of this new form of advertising. A lot of companies derive substantial benefits from social media, but this measure is necessary to learn to use effectively. For anyone who knows the rules of social marketing can be a great tool to keep customers, but others due to improper use can cause serious problems. Social network marketing strategy wrong choice can be detrimental to business. The bad news travels much faster than sound, so one bad step and you will know about the vast majority of your customers. For this reason it is very important to consult with

specialists knowledgeable in this area. While social networking is a great tool for advertising, but it's not for every business. Several false claims about the social network marketing: The most important reason why you should need to use social networks to find new customers. This is one of the largest false claim. One of the most important components of social marketing is to keep existing customers than to find new. People often mistake these two measures. Some companies use social networks to search for new customers, but the benefits would be much greater if communication is maintained with existing customers. Social Network Marketing means to create a "Facebook" in your profile Social Media overwhelming share of Facebook, but it should be remembered, and other social media channels such as blog, forum, etc. Social marketing is an advertising scutching their customers. As we mentioned earlier, many companies are using this as an advertising platform. However, the effective use of this channel can get a number of benefits. Some of the company's social networks creates images with excellent personal and customers to evaluate.

Social networks are not only innovative, but also in terms of cost of communication. Social networking users are increasing rapidly in Lithuania. For example, the social network Facebook has more than 90 thousand consumers of our country. Social media - blogs, social networks and community, social marketing, real- time recordings, podcasts, virtual games - represent a growing debate between skeptics and Internet marketing "gurus". Some of the new Internet technologies tend to be called youth word in fashion, others they see huge business opportunities. Marketing experts say that the Internet and mobile communication based on the exchange of information between people can become one of the key success of business development directions of the economy during the economic downturn. Several years ago, mostly young people keen on only as a great form of leisure, now the social networking site has gained a wider application - they advertised, sold, purchased, and exchanged knowledge about the products and services. So the state agencies and private companies to ignore the phenomenon is no longer possible. Internet innovation every day and growing momentum of social media becomes an integral part of companies 'marketing strategy', - says the Internet and blogs Conference Login 2009 initiator Arnold Rogoznyj. He points out that Westerners can no longer rely solely on traditional forms of business communication and to keep abreast of economic development and to cope with the strong competition in their marketing communication strategies include social online networks. Social media is a relevant activity for your business and the board is, ahem, onboard. Now you need to make them understand what's involved and how it will be managed. Take them through the next steps, who will do it and timings (Table 2).

Table 2. Social network strategy steps

1.   Identifying goals and objectives
2. Finding your audiences
3. Developing tactics
4. Metrics and measurement
5. The content plan
6. Defining resources
7. Guidelines and training
8. Ongoing management and beyond

Source: Third Wave. Social Media Strategy Framework (2013)

By analysing the business plan and/or marketing strategy, it gives you a good idea of the types of things you can achieve by using social media: building awareness, establishing thought leadership, launching new products or services, increasing reach (either geographically or by sector), generating leads, increasing sales, research and

insight (understanding how to improve your product or service), saving costs (eg. reducing recruitment costs), building your community, creating word of mouth activity, improving public relations activity, driving traffic to a website or blog, improving SEO, improving customer/client relations, providing customer/client service, competitive analysis.

It is important think about those target audiences (aka people) and need to connect with to help you to achieve what you need to. The types of audiences you could be looking for include: current clients or customers, potential clients or customers, associates of current/potential clients or customers, journalists and editors, bloggers, suppliers, affiliate businesses, thought leaders. If you don't know where the people you want to connect with are, make the most of the various free monitoring tools to track who is talking about the keywords associated with your business: Google Analytics, Social Mention, Technorati, Addictomatic and Board Reader, to name a few, can help. This should highlight who has a voice in these subject areas.

In order to take your objectives in turn and create tactics to help you achieve them, with all of the above research in mind. Here is an example: Objective: Build brand awareness Now this is a very general objective, but a common one (which is why I've picked it). You could make this more specific if you like: build awareness in a certain region, for a specific service, in a certain sector. Better still attach some numbers to it to help with measurement: Grow brand awareness of xxxx service and increase web enquiries for that service by 10%. The more specific the better. The tactics for this could include:

- Launch a Twitter/Facebook/LinkedIn profile (as appropriate) and connect with the target audiences (or people, as I prefer to call them).
- Launch a blog showcasing relevant knowledge for the region, service area, sector etc. Build a presence on niche networking sites relevant to your objectives (these would have already been identified when you researched where your audiences are online).
- Research and identify relevant blogs for guest blogging opportunities.
- Research and identify relevant blogs and engage in discussions.
- Create a hashtag around your specialist area and drive the conversation.
- This could also be a hashtag around a regular Twitter chat.
- Develop a competition or creative word of mouth campaign across relevant platforms to raise awareness of the brand.
- Go through each objective you've already identified and list tactics. Then refine this list with your resources in mind (be realistic here, if not you could be setting yourself an unachievable workload (Gemma Went (2014).

When developed the social media tactics, you need to set the metrics to understand if those objectives are being met. Now this isn't an exact science as much of this activity relies on word of mouth, which has always been hard to pin down. Digital activity has made it much easier to get a handle on metrics and understand how the tactics are working A good content plan can supercharge activities and make sure you publish relevant content across the web. When considering content creation, never forget the goals and objectives that should guide your thinking around suitable topics. For example, if you need to raise awareness or become a thought leader in a particular service area/industry/product type, this should become a key topic area for which you will need to create content demonstrating your expertise Once you've generated ideas for content topics, you can start thinking about the various channels you will use it on and how you will use it:

- Blog: develop an editorial calendar, assigning topics to blog posts and set deadlines;
- Linked In: create conversation around key topics in the Group areas and add links to blog posts;
- Guest posts: approach other blogs and offer your content as a one off or as a regular contributor;
- Newsletter: not everyone will read your blog, so repurpose blog content here;
- Twitter and Facebook: share blog posts and start discussions around your topics;
- Ebooks: if you generate a lot of content on a particular topic, create an e-book that you can offer on the website or blog (just like we did with this);
- Content creation is an ongoing process and it's easy to run out of steam Gemma Went (2014).

So if you lose inspiration along the way, try a few of these ideas:

- Make the most of other media: share a slideshare presentation, a great video you uncover, infographics and other interesting gems you find;
- Add your own presentations to slideshare and share;
- Develop regular features, such as monthly or weekly roundups and reviews etc.;
- Publish interviews with interesting and relevant people;
- Invite guest bloggers to add a fresh perspective to your content;
- Invite customers or clients to ask questions, either on the blog;
- Facebook, Twitter or Linked In and answer them on your blog;
- If you attend an industry event, write a post event review;
- Create 'how to' lists (Gemma Went (2014).

Social media is an ongoing activity that needs commitment, so be sure to give it what it deserves from the start. Break down the activities into specifics and estimate how much time each will take. When we say "analysis", we use it as an umbrella term that spans monitoring, analytics and reporting. Monitoring helps you listen outside your owned platforms. Analytics help you listen on your owned platforms. Reports help you make sense of what you've heard. Monitoring tools help you analyze the public conversations on Social Media platforms. Monitoring gives you a glimpse into your customers their sentiment towards your brand and products, their interests and needs. These tools are available from a wide variety of vendors, and you need to test which one fits your needs best. Analytics are strong in Social Media, and easily accessible. More than in most other communication channels, engagement can be measured well here. Many platforms offer detailed measurements and analytics around users' engagement with your content. Reporting the results of Monitoring and Analytics is the basis on which to develop true insights, which will help you adapt and optimize your strategies. Let's expand on these a bit more. Monitoring. Successful monitoring requires two things:
•Clearly defined questions:
To get to useful insights, you need to know what you want to know.
•Establish processes:
In order to make most out of the insights your monitoring generates, you need processes that make sure that these insights get to the right people and places, and can be implemented. To give you a better feeling for monitoring, typical approaches may include:
• Topic radar: A regular snapshot evaluates the online conversations around your key topics (retail, banking, design...).
• Opportunities for engagement: Constant monitoring identifies opportunities to engage with users around the topics you're an established expert in. This could mean answering questions about these topics in general, or about your brand in particular.
• Feedback: Expand on the regular snapshots to include opinions about your brand or products, and based on this develop concrete recommendations for further action Gemma Went (2014).
Most monitoring tools available out there are still mostly a display of their technical capabilities but fail to act as a true source of insights. This has lead to most monitoring strategies being driven by whatever the chosen vendor can offer, instead of developing a clear strategy of what insights a company wants to see before choosing the vendor.

4. Facebook

Facebooks are often published at the start of the academic year by the administrations of colleges and universities, with the intention of helping students, faculty, and staff to get to know each other better. A facebook may be contrasted with a yearbook, which is traditionally published at the end of the academic year and usually includes details about various aspects of the preceding year, along with the sort of content one would find in a facebook. As stated Zhao *et al.* (2008) Facebook is in many ways similar to another popular online social networking site, Myspace, but it also has some unique features that are crucial to the present study. Like Myspace, Facebook enables users to present themselves in a number of ways. Users can display pictures in their online albums, describe their personal interests and hobbies, and list their friends and social networks. There is also a communication function on Facebook that allows users to interact with one another through comments and messages. However, Facebook differs from Myspace in one important aspect: it is nonymous and institutionally bound. For the college

and university version of Facebook, membership is restricted to those with an official campus email account, and users' real names are shown in their profiles. The display of users' real names and their institutional affiliations make the Facebook environment almost fully nonymous.

Stutzman *et al.* (2012) stated, that Facebook's transition from a university-focused social network site for students to a global social network site, however, was not seamless. In particular, changes to Facebook network structure and a series of unpopular moves raised users' privacy concerns. When Facebook debuted in 2004, the site was segmented by university, so that university network membership created a meaningful privacy boundary. Although university networks could be quite large (Acquisti, Gross (2006)), this boundary generally separated students from family, employers, and municipal law enforcement. Starting in 2006, Facebook gradually liberalized its policies for site membership, and began changing (and eventually discounting) the value of \networks within the service. Facebook was rewarded for these moves, with adoption climbing through a billion users as of late 2012. According Acquisti and Gross (2006), Lampe *et al.* (2007), Stutzman (2006) facebook is a social networking site that began with a focus on colleges and universities, but now includes high schools and other organizations, has been studied. These studies have collected profile information from Facebook through the use of a web crawler, and through surveys of members. Acquisti and Gross (2006) stated that Facebook members reveal a lot of information about themselves, and are not very aware of privacy options or who can actually view their profile.

Table 3. Facebook Statistics

Facebook Statistics	Data
Total number of monthly active Facebook users	1,310,000,000
Total number of mobile Facebook users	680,000,000
Increase in Facebook users from 2012 to 2013	22 %
Total number of minutes spent on Facebook each month	640,000,000
Percent of all Facebook users who log on in any given day	48 %
Average time spent on Facebook per visit	18 minutes
Total number of Facebook pages	54,200,000
Facebook Demographics	**Data**
Percent of 18-34 year olds who check Facebook when they wake up	48 %
Percent of 18-34 year olds who check Facebook before they get out of bed	28 %
Average number of friends per facebook user	130
Average number of pages, groups, and events a user is connected to	80
Average number of photos uploaded per day	205
Number of fake Facebook profiles	81,000,000
Global Facebook Reach Statistics	
Number of languages available on the Facebook site	70
Percent of Facebook users who are outside the United States	75 %
Number of users who helped translate Facebook	300,000
Facebook Platform Statistics	
Average number of aps installed on Facebook each day	20 million
Total number of apps and websites integrated with Facebook	7 million
Every 20 Minutes on Facebook	
Links shared	1 million
Friends requested	2 million
Messages sent	3 million
Facebook Company Statistics	**Data**
Total number of Facebook employees	4,619
Total 2012 Facebook revenue	$5,090,000,000
Total 2013 Facebook revenue	$6,150,000,000

Source: Statistic Brain Research Institute (2014)

Facebook consists of a series of interrelated profile pages in which members post a broad range of information about themselves and link their own profile to others' profiles. The core of the Facebook experience centers on users' ability to (a) post self-relevant information on an individualized profile page, (b) link to other members and

create a "friends" list, and (c) interact with other members (Buffardi and Campbell 2008; Tufekci 2008). Facebook statistics are presented in Table 3.

According Mills, the Facebook was started in 2004 by Harvard sophomore Mark Zuckerberg. The site was successfully founded with help from his roommates Dustin Moskovitz and Chris Hughes. Zuckerberg had, at the time, been studying computer sciences at the university, but dropped out to develop the site when Facebook began growing in popularity. Zuckerberg, founder and CEO of Facebook, is the main individual responsible for the design, product strategy and overall prosperity of the site. Facebook allows users to use of personal information between the user and hobbies, like classes, sports, books, movies, trademarks, likes public figure, public entities. Besides advertising positioning for certain segments, such as age, sex, residence location language you can choose a much more accurate and user preferences and corresponding segmentation. You can also choose display advertising only to specific users or their friends. Facebook is not limited just to attract visitors to the website itself. Various Facebook social network content linked with independent sites using all the tools of the largest and most popular Lithuanian sites with the exception of some of the Lithuanian social networks. Facebook user becomes a fan of a page, leave a comment or favorite page. The contents of the user's action can be automatically communicated to the user, their friend's personal news stream. Each user interaction with the page increases the likelihood that the organization and / or its activities have more consumers. Also user's names can be linked to a specific content within (this user license photos and video or mention of their names in text messages). Such actions can also be automatically notify the user and friends portrayed user profile "wall". In addition, users can spontaneously share information.

Conclusions

Internet Marketing is ICT to market your business online. Social media, in particular, is an area that has radically changed how you market your business. Consumers are much smarter and are not as interested in messages being broadcast to them and are therefore engaging more with social networks. Social network marketing is typically cheaper and a more effective method of targeting your potential customers. Advertising online as opposed to offline is also easier to track to see its effectiveness. Facebook allows users to use of personal information between the user and hobbies, like classes, sports, books, movies, trademarks, likes public figure, public entities. Besides advertising positioning for certain segments, such as age, sex, residence location language you can choose a much more accurate and user preferences and corresponding segmentation. ICT has become integral part of entrepreneurial activity, hence ignoring of social network marketing can threat sustainability of any entrepreneurial undertaking.

References

Achrol, R.S.; Kotler, P. 1999. Marketing in the Network Economy, *The Journal of Marketing* 63: 146–163.

Acquisti, A.; Gross, R. 2006. Imagined communities: Awareness, information sharing, and privacy on The Facebook, in Danezis, G.; Golle, P. (Eds.). *6 th Workshop on Privacy Enhancing Technologies* (PET '06). Vol. 4258 of LNCS.

Andresen, K.A. 2011. Marketing through social networks: business considerations - from brand to privacy, *William Mitchell Law Review* 38(1): 290–327.

Assaad, W.; Gómez, J.M. 2011. Social Network in marketing (Social Media Marketing) Opportunities and Risks, *International Journal of Managing Public Sector Information and Communication Technologies (IJMPICT)* 2(1): 13–22.

Baikovs, A.; Zariņš, I. 2013. Philosophical, legal and general issues of legal liability, *Entrepreneurship and Sustainability Issues* 1(1): 23–36. DOI: http://dx.doi.org/10.9770/jesi.2013.1.1(3)

Buffardi, L. E.; Campbell, W. K. 2008. Narcissism and social networking web sites, *Personality and Social Psychology Bulletin* 34: 1303–1314.

Çam, E.; İşbulan, O. 2012. A new addiction for teacher candidates: social networks, *OJET: The Turkish Online Journal of Educational Technology* 11(3): 14–19.

Chipp, K.; Ismail, Z. 2004. *E-Commerce a southern African perspective: the e-Commerce environment.* Claremont, South Africa: New Africa Books.

De Alencar, L.M.; Almeida, H.N. 2013. Economic viability and sustainability of solidarity economy enterprises: a case study on the technological incubator of popular cooperatives of the Catholic University of Salvador, *Entrepreneurship and Sustainability Issues* 1(2): 92–98. DOI: http://dx.doi.org/10.9770/jesi.2013.1.2(3)

Douglas, E. W. 2008. Social Marketing Campaigns and Children's Media Use, *The Future of Children* 18(1): 181–204.

Downes, S. 2005. Semantic Networks and Social Networks, *The Learning Organization* 12(5): 411–417.

Drucker, P.F. 1993. *Post capitalist Society.* Oxford: Butterworth Heinemann.

Dzemyda, I.; Raudeliūnienė, J. 2014. Sustainable youth entrepreneurship in conditions of global economy toward energy security, Entrepreneurship and Sustainability Issues 1(4): 247–256. DOI: http://dx.doi.org/10.9770/jesi.2014.1.4(7)

Failte Ireland, National Tourism Development Authority. 2012. Overview of internet marketing. Introduction to the various ways in which you can market your business online. Available on the Internet: <http://www.failteireland.ie/Market-Your-Business-Online.aspx>.

Figurska, I. 2014. Sustainable entrepreneurship: localization, acquiring and use of knowledge sources in competitive organization, *Entrepreneurship and Sustainability Issues* 1(4): 210–222. DOI: http://dx.doi.org/10.9770/jesi.2014.1.4(3)

Garškaitė-Milvydienė, K. 2014. Anti-crisis management of enterprises and possibilities of overcoming their critical condition, *Entrepreneurship and Sustainability Issues* 1(4): 187–203. DOI: http://dx.doi.org/10.9770/jesi.2014.1.4(1)

Gemma Went. Developing a social media strategy. 2014. Available on the Internet: <http://gallery.mailchimp.com/c5ab815d4ba94afbe58ad49c9/files/Developing_a_SM_Strategy_by_Red_Cube_Marketing.1.pdf>. [Accessed: 9 April 2014]

Išoraitė, M.; Steiblienė, L.; Mečėjienė, G. 2014. If obtained professional competences are suitable for sustainable entrepreneurship: case of Vilnius University of Applied Sciences, *Entrepreneurship and Sustainability Issues* 1(4): 239–246. DOI: http://dx.doi.org/10.9770/jesi.2014.1.4(6)

Lampe, C., N. Ellison, and C. Steinfield. 2007. A face(book) in the crowd: Social searching versus social browsing. *Proceedings of the 20th Anniversary Conference on Computer Supported Cooperative Work*, Banff, Alberta, Canada, 2007, pp. 167-170.

Laužikas, M.; Mokšeckienė. 2013. The role of creativity in sustainable business, *Entrepreneurship and Sustainability Issues* 1(1): 10–22. DOI: http://dx.doi.org/10.9770/jesi.2013.1(2)

Lemel, R. 2010. Social Networking Tools for Marketing Fine Art. *Allied Academies International Conference*. Las Vegas.

Litvaj, I.; Poniščiaková, O. 2014. Entrepreneurship and quality management, *Entrepreneurship and Sustainability Issues* 1(4): 204–209. DOI: http://dx.doi.org/10.9770/jesi.2014.1.4(2)

Microsoft Dynamics, CRM. 2009. CRM and Social Networking: Engaging the Social Customer. *White Paper*, 4p.

Moskvina, J. 2013. Social enterprises as a tool of social and economic policy, *Entrepreneurship and Sustainability Issues* 1(1): 45–54. DOI: http://dx.doi.org/10.9770/jesi.2013.1.1(5)

Palemo, O. 2008. Is Social media marketing relevant for Nigerian business environment. Available on the Internet: <http://www.incorporatenigeria.com/magazine/conversion-report/64-is-socialmedia-marketing-relevant-for-the-nigerian-environment>. [Accessed: 9 April 2014]

Prause, G.; Hunke, K. 2014. Sustainable entrepreneurship along green corridor, *Entrepreneurship and Sustainability Issues* 1(3): 124–133. DOI: http://dx.doi.org/10.9770/jesi.2014.1.3(1)

Tvaronavičienė, M. 2014. If industrial sector development is sustainable: Lithuania compared to the EU, *Entrepreneurship and Sustainability Issues* 1(3):134–142. DOI: http://dx.doi.org/10.9770/jesi.2014.1.3(2)

Raišienė, A.G.; Jonušauskas, S. 2013. Silent issues of ICT era: impact of techno-stress to the work and life balance of employees, *Entrepreneurship and Sustainability Issues* 1(2): 108–115. DOI: http://dx.doi.org/10.9770/jesi.2013.1.2(5)

Yazdanifard, R.; Khalid Obeidy, W.; Wan Fadzilah Wan Yusoff, Babaei, H.R. 2011. 2011 *International Conference on Computer Communication and Management.* CSIT Vol. 5, 577–581.

Statistic Brain Research Institute. 2014. Facebook Statistics. Available on the Internet: <http://www.statisticbrain.com/facebook-statistics/>. [Accessed 3 March 2014]

Stutzman, F. 2006. Student Life on the Facebook. Available on the Internet: <http://ibiblio.org/fred/facebook/stutzman_fbook.pdf>. [Accessed 3 April 2014].

Stutzman, F.; Grossy, R.; Acquisti, A. 2012. Silent Listeners: The Evolution of Privacy and Disclosure on Facebook, *Journal of Privacy and Condentiality* 4(2): 7–41.

Third Wave. Social Media Strategy Framework. 2013. A comprehensive guide to develop and implement strategies for communicating on the social web. Available on the Internet: <http://thirdwaveberlin.com/ThirdWave-SocialMediaStrategyFramework.pdf>.

Tufekci, Z. 2008. Grooming, gossip, Facebook and Myspace: What can we learn about these sites from those who won't assimilate? *Information, Communication & Society* 11: 544–564.

Wahl, M. 2014. Sustainable Entrepreneurship: The Wolf ButterBack Case, *Entrepreneurship and Sustainability Issues* 1(4): 223–229. DOI: http://dx.doi.org/10.9770/jesi.2014.1.4(4)

Wahl, M.; Prause, G. 2013. Toward understanding resources, competencies, and capabilities: business model generation approach, *Entrepreneurship and Sustainability Issues* 1(2): 67–80. DOI: http://dx.doi.org/10.9770/jesi.2013.1.2(1)

Zhao, S.; Grasmuck, S.; Martin, J. 2008. Identity construction on Facebook: Digital empowerment in anchored relationships, *Computers in Human Behavior* 24: 1816–1836.

Margarita IŠORAITĖ. Doctor of social science in Vilnius Gediminas technical university, name of associated professor was given in Mykolas Romeris University in Lithuania. Associated professor in Vilnius College. Research interests: human resource management, strategic marketing, marketing management, advertisement.

SUSTAINABLE RISK MANAGEMENT: FUZZY APPROACH TO VOLATILITY AND APPLICATION ON FTSE 100 INDEX

Sinem Peker[1], Manuela Tvaronavičienė[2], Bora Aktan[3]

[1]*Yasar University, Department of Statistics, Üniversite Caddesi, No: 35-37, Ağaçlı Yol, Bornova, Izmir35100, Turkey;*
[2]*Vilnius Gediminas Technical University, Sauletekio 11, 10223 Vilnius, Lithuania;*
[3]*University of Bahrain, College of Business Administration, Department of Economics & Finance, PO Box 32038 Isa Town, Kingdom of Bahrain*

Emails: [1]sinem.peker@yasar.edu.tr; [2]manuela.tvaronaviciene@vgtu.lt; [3]gbora@uob.edu.bh

Abstract. In this paper, a fuzzy volatility labeling algorithm is offered to detect the periods with abnormal activities on daily share returns. Considering the vagueness in the switches of the time periods, the membership functions of high and normal volatility classes are introduced. In the assignments, both the density structure and membership degree are used. It is believed that this algorithm may be helpful to construct different estimation models for the time periods with normal and abnormal activities. Authors offer algorithm, which can be used as a tool for sustainable risk management.

1. Introduction

Investment into securities requires sustainable risk management technique, which is crucial for sustainable development of business and for overall process of sustainable entrepreneurship (Baikovs, Zariņš 2013; Šimelytė, Antanavičienė 2013; Wahl, Prause 2013; Laužikas, Krasauskas 2013; Laužikas, Mokšeckienė 2013; Litvaj, Poniščiaková 2014; Figurska 2014; Šabasevičienė, Grybaitė 2014; Dzemyda, Raudeliūnienė 2014; Tvaronavičienė 2014; Garškaitė-Milvydienė 2014). Time series clustering is a popular technique which is used in monitoring on brain activities, commercial consumption, retail pattern, gene expression, financial data, robot sensor data and so on (Zhang *et al*. 2011). It can be applied in varies fields with different purposes such as, the grouping of the time series of star brightness in the astronomy; the grouping of countries by considering their time series of gross national product (GNP) in the economy; the grouping of companies by taking into account their time series of returns in the finance; the segmenting of the markets by handling the consumption behavior of consumers during a time period in the marketing (D'urso and Maharaj 2009).

In the literature, there are many researches about the generation of time series clustering methods. For example, Zhang *et al*. (2011) suggested a novel algorithm for shape based time series clustering by using dynamic time

warping distance function and hierarchical clustering algorithm. D'urso and Maharaj (2009) introduced a fuzzy clustering approach which is used the autocorrelation functions of time series. Maharaj and D'Urso (2011) proposed a fuzzy clustering approach for time series based on the estimated cepstrum which is the spectrum of the logarithm of the spectral density function. Rodpongpun *et al.* (2012) offered Selective Subsequence Time Series (SSTS) clustering which use data encoding to cluster only essential subsequences. Their technique automatically detects an appropriate number of clusters without user's intervention. Lai *et al.* (2010) put forward a novel two-level clustering method which takes into account both the whole time series and the subsequence information of time series. Chen and Tanuwijaya (2011) developed a multivariate fuzzy forecasting method which includes automatic clustering technique to forecast the Taiwan Stock Exchange Capitalization Weighted Stock Index (TAIEX). Cheng *et al.* (2008) produced a novel multiple-attribute fuzzy time series method which includes a fuzzy clustering to partition datasets objectively and allows processing of multiple attributes. Bang and Lee (2011) suggested a hierarchical classification technique in which the cross-correlation clustering algorithm is merged with the k-means clustering algorithm (HCKA) to overcome the problem dealing with non-linear data. Liao (2007) proposed the exploratory mining of multivariate time series using partition-based clustering methods. D'urso *et al.* (2013) handled the clustering of financial time series, they used an autoregressive representation of GARCH models in the partitioning around medoids algorithm. Alaeddini *et al.* (2009) focused on control charts and change point estimation problem. They suggested clustering as a potential tool for change point estimation and proposed a novel hybrid approach based on the concepts of fuzzy clustering and statistical methods. Nasibov and Peker (2011) proposed a time series labeling algorithm based on fuzzy c-means and k-nearest neighborhood rule.

Among these researches, D'urso and Maharaj (2009) underlined the fact that time series has dynamic behavior over time and the switch from one time state to another is generally vague. So a fuzzy approach may be more appropriate in the evaluation of it. Considering this fact, in this paper, a fuzzy volatility labeling algorithm is offered. In the algorithm, the membership functions of high and normal volatility classes are constructed by taking into account the time series. Each trading day is assigned to one of the classes, considering maximum membership degree. The density of trading days with abnormal activities, p, is calculated. The s trading days is handled and if the density of high activities in s trading days is greater than p, this period is labeled as "the period with high volatility"; otherwise it is labeled as "the period with normal volatility". The last procedure is applied on each s trading days.

2. Preliminaries

The Fuzzy Set Theory, which was firstly introduced by Zadeh (1965), is a very useful theory to handle vague and ambiguous problems, expressions of linguistic values and human subjective judgments of natural language (Cheng *et al.* 2008). To consider both vague and imprecise data, the characteristics of fuzzy sets allow a degree of membership to be associated with a value in a set (Bang and Lee 2011).

A fuzzy number A is a fuzzy subset of the real line $\Re$ with the membership function μ_A which is normal, fuzzy convex, upper semi-continuous, supp A is bounded, where $\text{supp } A = cl\{x \in R : \mu_A(x) > 0\}$ and cl is closure operator (Ban 2008). Let $A_\alpha = \{x \in R : \mu_A(x) \geq \alpha\}, \alpha \in (0,1]$, denote an α-cut of a fuzzy number A. Every α-cut of a fuzzy number is a closed interval, i.e. $A_\alpha = [A_L(\alpha), A_R(\alpha)]$ where (Grzegorzewski 2008)

$$A_L(\alpha) = \inf\{x \in \Re : \mu_A(x) \geq \alpha\} \tag{1}$$
$$A_R(\alpha) = \sup\{x \in \Re : \mu_A(x) \geq \alpha\}. \tag{2}$$

The most common membership functions are triangular, trapezoidal and Gaussian membership functions. They can be described by Eq.(3)-(5), respectively (Ang and Quek 2012; Lee and Pan 2009).

$$\mu_A(x;a_1,a_2,a_3)=\begin{cases}0 & , \quad x\le a_1 \ or \ x\ge a_3\\ \dfrac{x-a_1}{a_2-a_1} & , \quad a_1<x\le a_2\\ \dfrac{a_3-x}{a_3-a_2} & , \quad a_2<x<a_3\end{cases} \qquad (3)$$

$$\mu_A(x;a_1,a_2,a_3,a_4)=\begin{cases}0 & , \quad x\le a_1 \ or \ x\ge a_4\\ \dfrac{x-a_1}{a_2-a_1} & , \quad a_1<x<a_2\\ 1 & , \quad a_2\le x\le a_3\\ \dfrac{a_4-x}{a_4-a_3} & , \quad a_3<x<a_4\end{cases} \qquad (4)$$

$$\mu_A(x;a_1,a_2,a_3,a_4)=\begin{cases}e^{\frac{-(x-a_2)^2}{2a_1^2}} & , \quad x<a_2\\ 1 & , \quad a_2\le x\le a_4\\ e^{\frac{-(x-a_4)^2}{2a_3^2}} & , \quad x>a_4\end{cases} \qquad (5)$$

Their visual demonstrations are given in Figure 1.
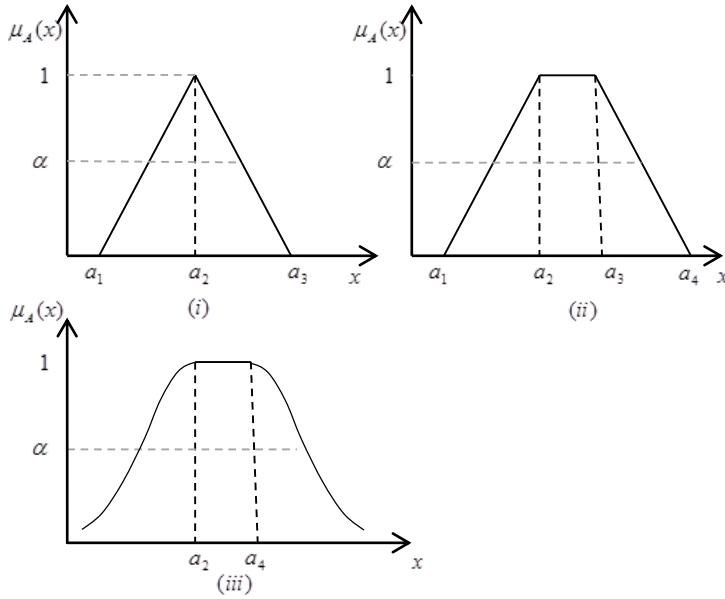
Fig.1. The triangular (i), trapezoidal (ii), Gaussian membership (iii) functions

Source: authors

3. Fuzzy Volatility Labeling Algorithm (FVL)

The offered algorithm is constructed to group daily share returns under the consideration of volatility. Considering the ambitious switches from one state to another state, the Gaussian membership functions of high and normal volatility classes are used. In the evaluations of membership functions, firstly, the daily share returns, Y_t, are separated into two groups. In one of the groups, the Y_t values which have standardized values in the interval of [-2, 2] are stored. These values are used in the evaluation of the membership function of normal volatility class. The remaining Y_t values are stored in other group, and from them, the membership function of high volatility class is evaluated. In both membership function evaluations, the descriptive statistics of daily share returns are considered.

After constructions of membership functions, each daily share return is reassigned to a class in which it has maximum membership degree. After all assignments, the density of high activities is calculated from whole time series. Then, the sub-periods of time series is handled, and the density of high activities of each sub-period is calculated. If the density of sub-period is greater than the density of whole time series, the sub-period is labeled as "the period with high volatility"; otherwise it is labeled as "the period with normal volatility".

3.1. Algorithm

Step 1: Calculate the daily share returns by Eq.(6),

$$Y_t = \ln\left(\frac{p_t}{p_{t-1}}\right) \tag{6}$$

Step 2: Obtain the standardized values of Y_t by Eq.(7)

$$Z = \frac{\left(Y_t - \bar{Y}_t\right)}{s_D} \tag{7}$$

where $\bar{Y}_t$, and s_D are the mean and the standard deviation of Y_t values, respectively.

Step 3: Separate the daily share returns Y_t which have Z_t values such that $Z < -2$ and $Z > 2$ and assign them to "*the class of high volatility, C_{HV}*". Assign the other remaining Y_t values to "*the class of normal volatility, C_{NV}*".

Step 4: Obtain the membership function of the class of high volatility, C_{HV}, via Eq.(8)

$$\mu_{C_{HV}} = e^{-\frac{1}{2}\left(\frac{a - Y_i}{b}\right)^2} \tag{8}$$

where $a = \left\{Y_t \in C_{HV} \middle| \max(Y_t)\right\}$ and b is the standard deviation of Y_t values such that $Y_t \in C_{HV}$.

Evaluate the membership function of the class of normal volatility, C_{NV}, via Eq.(9)

$$\mu_{C_{NV}} = e^{-\frac{1}{2}\left(\frac{Y_i - c}{d}\right)^2} \tag{9}$$

where $c = \left\{Y_t \in C_{NV} \middle| mean(Y_t)\right\}$ and d is the standard deviation of Y_t values such that $Y_t \in C_{NV}$.

Step 5: Reassign each Y_t to C_i in which $\mu_{c_i} = \max(\mu_{C_{HV}}, \mu_{C_{NV}})$

Step 6: Find the density of high activities by Eq.(10),

$$p = \frac{n_{HV}}{n_{HV} + n_{NV}} \tag{10}$$

where n_{HV} and n_{NV} are the number of Y_t in the classes of C_{HV} and C_{NV}, respectively.

Step 7: Take into account s trading days,

- if the density of high activities in s trading days, p_s, is greater than p, label these s trading days as "the period with high volatility";
- if the density of high activities in s trading days, p_s, is smaller than or equal p, label these s trading days as "the period with normal volatility"

Repeat this step for next s trading days.

For new observations, just only step 5 and step 7 may be applied for assignments and the other calculations and evaluations in other steps can be taken as constants. Or step 5-7 or whole algorithm can be processed, interactively.

4. Application

In this section, the offered fuzzy volatility labeling algorithm is applied on FTSE 100 index over the period of 20.08.2007-20.08.2012. **In step 1**, the daily share returns are obtained. The related descriptive statistics are calculated (Table 1).

Table 1. Descriptive statistics of daily share returns

Mean	Stdev	Median	Max	Min
-3.19451E-05	0.015431	0.000227	0.093842	-0.09265

Source: authors

In step 2, the standardized values of daily share returns are calculated via $Z = (Y_t - (-0.0000319451))/0.015431$

In step 3, the daily share returns which have standardized values in the interval of [-2, 2] are stored in the class of normal volatility, C_{NV} ; the other ones are stored in the class of high volatility, C_{HV} .

In step 4, the mean and the standard deviation of daily share returns in the class of normal volatility, C_{NV} , are calculated as 0.000199 and 0.011495, respectively. The maximum value and the standard deviation of daily share returns in the class of high volatility, C_{HV} , are found as 0.093842 and 0.049178, respectively. Via these values, the membership functions of classes are constructed as following,

$$\mu_{C_{NV}} = e^{-\frac{1}{2}\left(\frac{Y_i - 0.000199}{0.011495}\right)^2} \quad , \quad \mu_{C_{HV}} = e^{-\frac{1}{2}\left(\frac{0.093845 - Y_i}{0.049178}\right)^2} \; .$$

In step 5, each daily share return is reassigned to a class in which it has a greater membership degree, considering membership functions in step 4.

In step 6, it is determined that 138 daily share returns fall high volatility class. By using this value, the density of high activities is calculated as $p = 138/1262 = 0.10935024$.

In Step 7, one month periods are taken as sub-periods and the density of high activities of each month is calculated. The periods which have a greater density value than 0.10935024 are labeled as "the period with high volatility". The remaining ones are labeled as "the period with normal volatility". The visual demonstration of this algorithm is given in Figure 2.
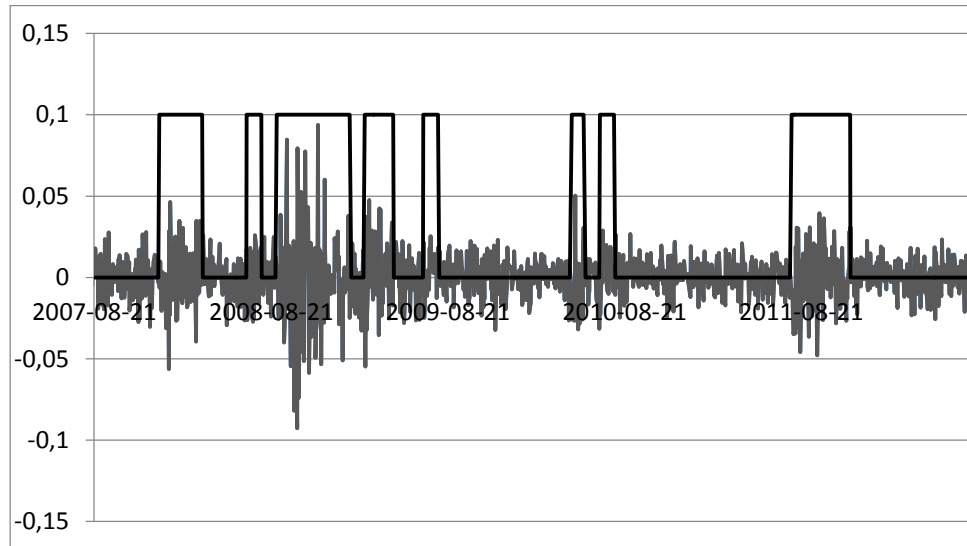
Fig.2. The periods of FTSE 100 with normal and high volatilities

Source: authors

In Figure 2, the daily share returns are shown with grey lines. The labels of periods are shown with black lines. The black lines at the 0 value represent "the periods with normal volatility"; the black lines at the 0.1 value represent "the periods with high volatility". In the black lines, 0 and 0.1 values have not the mathematical meanings; they are just used arbitrarily for the visual representations of the periods of two different groups.

Conclusions

In this paper, a fuzzy volatility labeling algorithm is offered to detect the abnormal activities in daily share returns. Considering vagueness in the switches of the states, fuzzy numbers are used for the evaluation of the classes of normal and abnormal activities of the daily share returns. In the generation of the membership functions of high and normal volatility classes, the descriptive statistics of daily share returns are used. Each daily share return is assigned to one of the classes by taking into account maximum membership degree. After all assignments, a common density of high activities is calculated. Then the time series is handled as sub-periods, and for each sub-period, the density of high activities is obtained. If it is greater than the common density of high activity, the related sub-period is labeled as "the period with high volatility"; if not, it is labeled as "the period with normal volatility".

The offered algorithm is applied on FTSE 100 index over the period of 20.08.2007-20.08.2012. The sub-periods with high and normal volatilities are detected. Accordingly, it is decided that 02.01.2008-31.03.2008, 01.07.2008-31.07.2008, 01.09.2008-30.01.2009, 02.03.2009-30.04.2009, 01.07.2009-31.07.2009, 04.05.2010-28.05.2010, 01.07.2010-30.07.2010, 01.08.2011-30.11.2011 sub-periods have high volatility.

The offered algorithm can be employed for sustainable risk management purposes.

References

Alaeddini, A.; Ghazanfari, M.; Nayeri, M.A. 2009. A hybrid fuzzy-statistical clustering approach for estimating the time of changes in fixed and variable sampling control charts, *Information Sciences* 179: 1769–1784.

Ang, K.K.; Quek C. 2012. Supervised Pseudo Self-Evolving Cerebellar algorithm for generating fuzzy membership functions, *Expert Systems with Applications* 39(3): 2279–2287.

Baikovs, A.; Zariņš, I. 2013. Philosophical, legal and general issues of legal liability, *Entrepreneurship and Sustainability Issues* 1(1): 23–36. DOI: http://dx.doi.org/10.9770/jesi.2013.1.1(3)

Ban, A. 2008. Approximation of fuzzy numbers by trapezoidal fuzzy numbers preserving the expected interval, *Fuzzy Sets and Systems* 159(11): 1327–1344.

Bang, Y.K.; Lee, C.H. 2011. Fuzzy time series prediction using hierarchical clustering algorithms, *Expert Systems with Applications* 38: 4312–4325.

Chen, S.M.; Tanuwijaya, K. 2011. Multivariate fuzzy forecasting based on fuzzy time series and automatic clustering techniques, *Expert Systems with Applications* 38(8): 10594–10605.

Cheng, C.H.; Cheng, G.V.; Wang, J.W. 2008. Multi-attribute fuzzy time series method based on fuzzy clustering, *Expert Systems with Applications* 3: 1235–1242.

D'Urso, P.; Cappelli, C; Lallo,D.D; Massari, R.2013. Clustering of financial time series, *Physica A: Statistical Mechanics and its Applications* 392 (9): 2114–2129.

D'Urso, P.; Maharaj, E.A. 2009. Autocorrelation-based fuzzy clustering of time series, *Fuzzy Sets and Systems* 160: 3565–3589.

Garškaitė-Milvydienė, K. 2014. Anti-crisis management of enterprises and possibilities of overcoming their critical condition, *Entrepreneurship and Sustainability Issues* 1(4): 187–203. DOI: http://dx.doi.org/10.9770/jesi.2014.1.4(1)

Litvaj, I.; Poniščiaková, O. 2014. Entrepreneurship and quality management, *Entrepreneurship and Sustainability Issues* 1(4): 204–209. DOI: http://dx.doi.org/10.9770/jesi.2014.1.4(2)

Figurska, I. 2014. Sustainable entrepreneurship: localization, acquiring and use of knowledge sources in competitive organization, *Entrepreneurship and Sustainability Issues* 1(4): 210–222. DOI: http://dx.doi.org/10.9770/jesi.2014.1.4(3)

Šabasevičienė, V.; Grybaitė, V. 2014. Main foreign direct investment factors as precondition of sustainable entrepreneurship: evidence from Lithuania, Central and Eastern Europe, *Entrepreneurship and Sustainability Issues* 1(4): 230–238. DOI: http://dx.doi.org/10.9770/jesi.2014.1.4(5)

Dzemyda, I.; Raudeliūnienė, J. 2014. Sustainable youth entrepreneurship in conditions of global economy toward energy security, *Entrepreneurship and Sustainability Issues* 1(4): 247–256. DOI: http://dx.doi.org/10.9770/jesi.2014.1.4(7)

Grzegorzewski, P. 2008. Trapezoidal approximations of fuzzy numbers preserving the expected interval -Algorithms and properties, *Fuzzy Sets and Systems* 159 (11): 1354–1364.

Lai, C.P.; Chung, P.C.; Tseng, V.S. A. 2010. Novel two-level clustering method for time series data analysis, *Expert Systems with Applications* 37: 6319–6326.

Laužikas, M.; Krasauskas, A. 2013. Impacts of sustainable structural growth on the economic performance of listed companies, *Entrepreneurship and Sustainability Issues* 1(2): 81–91. DOI: http://dx.doi.org/10.9770/jesi.2013.1.2(2)

Laužikas, M.; Mokšeckienė. 2013. The role of creativity in sustainable business, *Entrepreneurship and Sustainability Issues* 1(1): 10–22. DOI: http://dx.doi.org/10.9770/jesi.2013.1(2)

Lee, C.H.; Pan, H.Y. 2009. Performance enhancement for neural fuzzy systems using asymmetric membership functions, *Fuzzy Sets and Systems* 160(7): 949–971.

Liao, T.W. 2007. A clustering procedure for exploratory mining of vector time series, *Pattern Recognition* 40(9): 2550–2562.

Maharaj, E.A.; D'Urso, P. 2011. Fuzzy clustering of time series in the frequency domain, *Information Sciences* 181: 1187−1211.

Nasibov, E.N.; Peker, S. 2011. Time series labeling algorithms based on the K-nearest neighbors' frequencies, *Expert Systems with Applications* 38: 5028–5035.

Rodpongpun, S. V. Niennattrakul, C.A. 2012. Ratanamahatana. 2012. Selective Subsequence Time Series clustering, *Knowledge-Based Systems* 35: 361–368.

Šimelytė, A.; Antanavičienė, J. 2013. Economic development and its influence on state capital structure, *Entrepreneurship and Sustainability Issues* 1(1): 1–9. DOI: http://dx.doi.org/10.9770/jesi.2013.1(1)

Tvaronavičienė, M. 2014. If industrial sector development is sustainable: Lithuania compared to the EU, *Entrepreneurship and Sustainability Issues* 1(3):134–142. DOI: http://dx.doi.org/10.9770/jesi.2014.1.3(2)

Wahl, M.; Prause, G. 2013. Toward understanding resources, competencies, and capabilities: business model generation approach, *Entrepreneurship and Sustainability Issues* 1(2): 67–80. DOI: http://dx.doi.org/10.9770/jesi.2013.1.2(1)

Zadeh, L.A. 1965. Fuzzy sets, *Inform and Control* 8: 338–353.

Zhang, X.; Liu, J.; Du, Y.; Lv, T. 2011.A novel clustering method on time series data, *Expert Systems with Applications* 38: 11891–11900.

Sinem PEKER – Dr. Assist. Professor at Yasar University, Department of Statistics. She obtained her both MSc and PhD degrees from Dokuz Eylul University in Turkey. Her research interests focus mainly on Data analysis, Fuzzy logic, Data mining, Clustering.

Manuela TVARONAVIČIENĖ - Dr., full professor at Vilnius Gediminas Technical University, Business Management Faculty and full professor at The General Jonas Žemaitis Military Academy of Lithuania; member of editorial boards of peer-reviewed international scientific journals, expert of the Research Council of Lithuania, head and member of scientific projects. She is alumnus of IESE Business School; raised qualifications at Harvard Business School (USA) and Cambridge University, Judge School (UK). She is author of more than 60 papers. Research interests: economic growth, sustainable development, innovations, investments, energy security, entrepreneurship.

Bora AKTAN - Dr., Assist. Professor of Finance, College of Business Administration, University of Bahrain. His current research activity focuses on emerging capital markets, global investments particularly in real estate investment trusts, financial time-series analysis, volatility modelling-forecasting and energy issues. He has published in different refereed journals such as International Journal of Forecasting, European Journal of Finance, International Journal of Business, Journal of Property Investment and Finance. Dr. Aktan is a member of some professional bodies such as The International Institute of Forecasters (IIF), Society for the Study of Emerging Markets (SSEM), The Society for Financial Econometrics (SOFIE), among others. Dr. Aktan also serves EuroMed Research Business Institute as a Research Fellow at the Asset Management and Emerging Markets Groups.

ENTREPRENEURSHIP AND SUSTAINABILITY ISSUES

A HOLISTIC CONCEPT FOR THE SUSTAINABLE EVALUATION OF COMPANY SHARES

Gunnar Prause

Tallinn University of Technology, Estonia

E-mail: gunnar.prause@ttu.ee

Abstract. Concerning the financial shares there exist a huge variety of approaches in literature. The majority of the existing concepts for the evaluation of company shares focus on financial aspects by stressing the model of present net value or of Black – Scholes in order to approximate the "financial value" of the equity to be able to calculate a fair participation of the shareholder on the company profit. The "political value" of a share, i.e. evaluation of the voting power related to a company shares, represents a rather neglected topic. An important reason for that situation is related to the fact that the voting power of shares is considered rather as a question for the SME sector than for bigger companies. In practical business life formalized methods based on correction tables are used to include the voting power into the evaluation of company shares. These approaches are rather based on historic transactions than on an analytical concept and they do not take under account the specific situation in companies. The paper will discuss a holistic approach for the evaluation of company shares based on mathematical game theory in order to develop sustainable model for integral evaluation of the "political" value and the "financial" value of company shares. The results of the mathematical approach will then be compared with the most often used methods for the evaluation of voting power of shares in business life in order to give recommendations for more realistic and fairer evaluation methods.

Keywords: evaluation of companies, voting power, game theory, mathematical models for economic problems

1. Introduction

In terms of financial evaluation of companies and their shares there exists a series of different approaches in scientific literature. The majority of the existing concepts is based on the models of present net value or the approach of Black – Schools focussing on the "financial value" of equity and highlighting the corresponding contribution of the shareholder to the company's profit (Leisewitz 1999; Hering 2005; Drukarczyk and Schüler 2009; Baikovs, Zariņš 2013; Laužikas, Krasauskas 2013; Garškaitė-Milvydienė 2014). The "political value" of shares, pointing to the evaluation of the voting power related to the company's shares represents rather a neglected approach in the academic discussion even if there are studies concerning the influence of shareholders voting rights on special topics like their effect on the synergy of mergers and acquisitions or their relationship with dividend promises (Hsieh and Wang 2008; Cox and Roden 2000; Giriūnienė 2013; Giriūnas, Mackevičius 2014). Main reasons behind this are related to complicate modelling of voting power of shares and the fact that the voting power of shares or packages of shares is more interesting for the SMEs sector rather than for bigger companies. In real business life the evaluation of the voting power plays an important role in mergers where the political influence related to packages of shares has to be evaluated and where a fair evaluation of the political value safeguards a

sustainable development after the merger. The usual procedure uses premiums, called in our case control primes, which are added as a fixed percentage to the financial value of a package of shares. The amount of the premium is oriented towards the correction tables expressing adding to the financial value of the shares, depending on the size of the share package. Generally, the control prime is neither mathematically founded nor oriented towards the specific situation of a company.

A literature review reveals that the normal range of a control prime is between 15% and 150%, which is added to the inner value of the share. An empirical inside view into the height of paid control primes for the years 1990-1999 was done in the MergerStat Review study (2009) for 560 American transactions with a purchasing price of at least 1 Mio. $, and an ownership share of at least 10% . The study revealed for 1999 an annual average control prime of about 40% and a median of about 30%, and a range for the control prime between minus 64.5% and plus 423.5 %. Surprisingly in 78 of the 560 transactions the control prime was negative, and based on these 560 transactions it was possible to elaborate the following Table 1.

Table 1. Range for the control prime

Control prime	Number of cases	% of cases
< 15 %	123	26
15 – 30 %	113	23
30 – 45 %	97	20
45 – 60 %	57	12
60 – 75 %	37	8
75 – 100 %	26	5
> 100 %	29	6

Source: MergerStat Review (2009)

Even if it seems that the presented table is a little bit old, more recent results brought to light that the values of the correction table for the 1990s are in line with the more recent results of mergers, which took place about 10 years later (MergerStat Review 2009). The correction table approach is based on the statistical results from former mergers and acquisitions of bigger companies listed on the American stock exchanges bearing the weakness that they are neither reflecting the specific shareholder situation in a specific company nor they are taking into account a general mathematical approach. The paper will propose a holistic approach for the evaluation of company' shares based on the mathematical game theory trying to integrate the "political" value and the "financial" value of company's shares in order to arrive at a more reasonable evaluation method of company shares.

2. The Banzhaf Index

Starting point for the mathematical approach is the Penrose-Banzhaf index, called only Banzhaf index in this article, which exists in a normalised and un-normalised form, and which describes the voting power of shareholders in political systems. The pioneer work was started by Lionel Penrose in 1946 and has been reinitiated by John F. Banzhaf in 1965, yielding the normalised Banzhaf index, which will be used in this paper (Penrose 1946; Banzhaf 1965). The potential of the concept of Banzhaf for analysing the political power constellations has been proven in various cases in the political science, like in the case of the Nice Agreement of the European Union (Wilming 1995).

The basic principle of the calculation of the Banzhaf index is the analysis of majority constellations among shareholders or coalitions of shareholders, where majority means that a coalition of shareholders is able to gather enough votes to exceed the quorum for the corresponding decision. Principally, a majority depends always on the quorum, which is in correspondence with the decisions, 50%, 2/3 or 75% of the votes, respectively. Taking v as the value function on the set of coalitions of shareholders of a company for a certain coalition K, the value v(K), depending on the quorum, is 1 if K represents a winning coalition. Otherwise if K is a losing coalition the value is 0. This approach leads to a normalised value function where the image interval for v is the compact interval [0;1] for all possible coalitions.

The concept of Banzhaf is based on the idea that the political power a shareholder is higher if he can turn a losing coalition into a winning one. A shareholder who is able to change a winning coalition into a losing one is called critical or pivotal shareholder for a certain coalition. By using the value function v for a coalition K the shareholder i is pivotal if and only if $[v(K) – v(K – \{i\})] = 1$. For all other coalitions, i.e. where the shareholder i is not pivotal, the term $[v(K) – v(K – \{i\})]$ is always equal 0 so that these coalitions need not to be considered. With this approach to each shareholder, there can be associated a voting or a political power, which can be expressed as a percentage where the voting powers of shareholders sum up to 100%. The value of the voting power of a shareholder, called the Banzhaf index for the shareholder i, is calculated by dividing the number of winning coalitions γ where i is critical by the sum of all winning coalitions where another shareholder than i is critical. By doing so the value of the normalised Banzhaf-Index is equal to (Holler and Illing 2006; Wilming 1995):

$$\beta_i = \frac{\gamma_i}{\sum_{i=1}^{n} \gamma_i} = \frac{\sum_{i \in K; K \subseteq W^i}[v(K) - v(K - \{i\})]}{\sum_{i=1}^{n} \sum_{i \in K; K \subseteq W^i}[v(K) - v(K - \{i\})]}$$

An analysis of the properties of the Banzhaf index reveals that the power of a shareholder is not an absolute value; it is always depending on the structure of the decision making institution, i.e. voting power in the sense of Banzhaf is a context sensitive construct that reflects the political situation of a shareholder relative to other shareholders and the political environment. Hence, in the literature a large number of paradoxes in the context of the Banzhaf index is well known leading to situations where an increase or decrease of shares imply opposite effects on the voting power (Felsenthal and Machover 1998). These phenomena shed light on the fact that the transactions of shares lead to changes in control primes, especially in the case where packages of shares are accumulated.

The calculation of the Banzhaf index for the different shareholders depends on the quorum and the political situation in the company, and there exist no general rules to fix a control primes for a shareholder. Usually the quorum for the majority of operative decisions is 50% plus, but even with this simplification the specification of a fair control prime is a complicated task, which will be demonstrated by the following example. Let us pretend that the company has only 3 shareholders and the quorum is 50%. We will consider 3 different companies X, Y and Z with the 3 shareholders A, B and C where the percentage of shares, which are owned by the shareholders, is different (Table 2).

Table 2. The calculation of the Banzhaf index

Shareholder	Company X	Company Y	Company Z	Banzhaf Index
A	1/3	20%	15%	1/3
B	1/3	40%	40%	1/3
C	1/3	40%	45%	1/3

Source: author's calculation

The corresponding Banzhaf index based on the 50% quorum for the different shareholders in the 3 companies are all the same, namely 1/3. So the question appears how to fix a fair control prime for the 3 shareholders. The case of company X is easy to solve since the financial power and the political power are in line, i.e. the control prime for all shareholders is zero. More complicated are the cases of the companies Y and Z where a difference between the financial and the political power exists and where the deviation especially for shareholder A for company Z is higher than for company Y.

3. A Holistic Shareholder Value

The scientific literature does not have a unique solution for the integral evaluation problem for a shareholder, taking simultaneously into account the financial and the political values of a share in order to generate a holistic value of the shareholder. One approach for the calculation of a holistic value of a shareholder can be based on the use of the financial and the political value as input factors. For the financial value we will take the percentage of package of shares of the shareholder, whereas for the political value we will take the corresponding Banzhaf index. Thus, if H is the holistic value of the share of a shareholder i, A the financial value for the shareholder and M the voting power of the shareholder, then $H_i = R(A,M,i)$ with an unknown function R. In the sequel we will discuss different versions for the function R. The simplest method for choosing R is a weighted sum of the financial value A and the value M for the voting power yielding the following equation:

$$H = A + \alpha(M - A)$$, with $0 \le \alpha \le 1$.

The parameter α fixes the weights of the financial value A and the power index M of the share. The higher the parameter α is chosen, the higher the voting power of the share is weighted. This approach safeguards that the sum of all corrected shares of all shareholders will sum up to 100%. Therefore, the holistic share value is calculated as a weighted sum of the financial and the political value of the share. As a special case appears for α = 0.5, where the weighted sum leads to an equation for H, which is analogue to the famous practitioners formula for the evaluation of companies, which assumes that a realistic first estimation of the company value is the average of the capitalized earning value and the asset value of the company yielding in our case of the holistic shareholder value to the following equation (Peemöller 2012):

$$H = \frac{A+M}{2}$$, with the financial value A and the voting power M.

A more sophisticated way for the construction of the function R and the calculation of H is based on the Gini coefficient which represents a well-known statistical measure for the inequality within a value set of a distribution (Gini 1909 and 1912). It should be recalled that a Gini coefficient of zero expresses an equal distribution, whereas a Gini coefficient of one or 100% expresses maximal inequality among values. Mathematically the Gini coefficient is usually defined by using the Lorenz curve (Bleymüller *et al.* 2008). In our approach the Gini coefficient is used in a first step to calculate the inequality of the political power among the shareholders in comparison with their company shares.

In order to illustrate the idea we take our already discussed example with the three stakeholders and the three companies to calculate the Gini coefficients for the three companies X, Y and Z on the base of the initial situation (Table 3).

Table 3. Gini coefficients for the three companies X, Y and Z

Shareholder	Company X	Company Y	Company Z	Banzhaf Index
A	1/3	20%	15%	1/3
B	1/3	40%	40%	1/3
C	1/3	40%	45%	1/3

Source: author's calculation

Already from a first look to the table it easy to see that the Gini coefficient in company X is zero since the financial shares of the three shareholders are coincident with the Banzhaf index, i.e. the financial power and the political power are in line so all values are equally distributed. Another picture reveals the situation in the companies Y and Z. The underlying value sets for the companies Y and Z which are leading to the corresponding Lorentz curve are listed in the Table 4.

Company Y		Company Z	
0%	0	0%	0
40%	1/3	45%	1/3
80%	2/3	85%	2/3
100%	1	100%	1

Source: author

On the base of these data it is possible to calculate the Gini coefficients for company Y and company Z which leads to the results (Table 5).

Table 5. Gini coefficients for company Y and company Z

Company X	Company Y	Company Z
0,00	0,13	0,20

Source: author's calculation

The result shows that in company Z the greatest deviation between the financial share and the political share appears. This deviation between the financial and the political power expressed by the Gini coefficient is now used to find a new calculation method for H. The background idea is that if the Gini coefficient measures the integral deviation from equal distribution in form of a percentage then it will be a reasonable approach to distribute the Gini percentage as a control prime to those shareholders with a Banzhaf index higher than its financial value. If more than one shareholder exists in the company whose Banzhaf index higher than its financial value then the Gini percentage shall be distributed proportionally according to the deviation to these shareholders. For other shareholders enjoying a lower Banzhaf index than the financial value there will be no control prime. Coming back to our example with the three shareholders and the three companies there is only shareholder A in company Y and company Z, who suffers under a higher Banzhaf index than the financial value, so that the full Gini percentage of 13% and 20% can be added to as a control prime to A in company Y and company Z. If more than one shareholder like A would appear in a company, then the Gini percentage would be distributed among these shareholders proportionally to their deviation between the Banzhaf index and the financial value like already stated.

Conclusions

When it comes to the evaluation of shares and packages of shares of companies the scientific discussion is usually dominated by topics related to the financial value. The consideration of the political power of the shareholder in the evaluation is mainly neglected. Only in special cases like mergers and acquisition of big companies or the relationship of voting rights and dividends the political power comes into the focus and even in these cases the existing results are more of statistical nature based on historic transactions so that they do not take into account the specific company situation.

Mathematical game theory offers approaches for the evaluation of political power in institutions and a well know concept is the Penrose – Banzhaf index. The normalised version, called Banzhaf index, is a powerful concept to evaluate the voting power of shareholders. Even if the Banzhaf index depends on a fixed quorum it is possible to attribute a voting power to shareholders, which realistically reflects the political power in a certain company environment and helps so to safeguard a sustainable development after the merger.

On the basis of the Banzhaf index of a shareholder together with the financial value of its package of shares it becomes possible to propose a holistic shareholder value integrating the financial and the political power and turning into a unique value. The paper proposes different methods for this holistic evaluation making it possible

also to offer solutions for the calculation of control primes for each size of company, including SMEs sector reflecting the specific situation of a company together with its specific institutional business environment.

References

Banzhaf, J. 1965. Weighted voting doesn't work: A mathematical analysis, *Rutgers Law Review* 19(2): 317–343.

Bleymüller, J.; Gehlert, G.; Gülicher, H. 2008. *Statistik für Wirtschaftswissenschaftler* [Statistics for Economists]. 15th edition. Verlag Vahlen.

Cox, S.; Roden, D. 2000. *The Source of Value of Voting Rights and related Dividend Promises.* Indiana University.

Drukarczyk, J.; Schüler, A. 2009. *Unternehmensbewertung* [Business evaluation]. Vahlen Verlag, München.

Felsenthal, D.; Machover, M. 1998. *The measurement of voting power theory and practice, problems and paradoxes*. Cheltenham.

Garškaitė-Milvydienė, K. 2014. Anti-crisis management of enterprises and possibilities of overcoming their critical condition, *Entrepreneurship and Sustainability Issues* 1(4): 187–203. DOI: http://dx.doi.org/10.9770/jesi.2014.1.4(1)

Gini, C. 1909. Concentration and dependency ratios (in Italian). English translation in *Rivista di Politica Economica* 87 (1997): 769–789.

Gini, C. 1912. Variabilità e mutabilità [Variability and Mutability]. C. Cuppini, Bologna, 156 p. Reprinted in Memorie di metodologica statistica (Ed. Pizetti, E.; Salvemini, T). Rome: Libreria Eredi Virgilio Veschi (1955).

Giriūnas, L.; Mackevičius, J. 2014. Evaluation of frauds in public sector, *Entrepreneurship and Sustainability Issues* 1(3): 143–150. DOI: http://dx.doi.org/10.9770/jesi.2014.1.3(3)

Laužikas, M.; Krasauskas, A. 2013. Impacts of sustainable structural growth on the economic performance of listed companies, *Entrepreneurship and Sustainability Issues* 1(2): 81–91 DOI: http://dx.doi.org/10.9770/jesi.2013.1.2(2)

Baikovs, A.; Zariņš, I. 2013. Philosophical, legal and general issues of legal liability, *Entrepreneurship and Sustainability Issues* 1(1): 23–36. DOI: http://dx.doi.org/10.9770/jesi.2013.1.1(3)

Giriūnienė, G. 2013. Public sector's subsidies to business – suitability valuation of labor market support measures, *Entrepreneurship and Sustainability Issues* 1(1): 37–44. DOI: http://dx.doi.org/10.9770/jesi.2013.1.1(4)

Hering, T. 2005. *Unternehmensbewertung* [Business Evaluation]. Oldenbourg Verlag, Berlin.

Holler, M.; Illing, G. 2006. *Einführung in die Spieltheorie* [Introduction to Game Theory]. Berlin.

Hsieh, J.; Wang, Q. 2008. *Shareholder Voting Rights in Mergers and Acquisitions*. Georgia Institute of Technology.

Leisewitz, M.C.1999. Das Problem der Unschärfe in der Unternehmensbewertung [The problem of the uncertainty in the evaluation of businesses]. Göttingen.

Mergerstat Review. 2009. Control Premium Data 2007-2008.

Peemöller, V. 2012. *Praxishandbuch der Unternehmensbewertung: Grundlagen und Methoden* [Practical Guide for the Business Evaluation: Principles and Methods]. Bewertungsverfahren. Besonderheiten bei der Bewertung, NWB Verlag, Herne.

Penrose, L. 1946. The Elementary Statistics of Majority Voting, *J. Royal Statistical Society* 109(1): 53–57.

Wilming, C. 1995. *Institutionelle Konsequenzen einer Erweiterung der EU* [Institutional consequences of EU enlargement]. Baden-Baden.

Gunnar PRAUSE is Professor for International Business in Tallinn School of Economics and Business Administration (TSEBA) of Tallinn University of Technology. Research interests: International Business, Entrepreneurship & SME – Management, Logistics, Innovation. He is Board Member of the Centre for Business Research and Development at the Department of Business Administration of TSEBA, Board Member of the Institute of Cooperative Studies at Humboldt University Berlin, Board Member of Baltic China Science Park Network. He is author of more than 100 scientific articles.

ENTREPRENEURSHIP AND SUSTAINABILITY ISSUES

SUSTAINABLE ENTREPRENEURSHIP THROUGH MOTIVATION: CASE OF LATVIAN COMPANIES

Žanna Caurkubule[1], Aleksandrs Rubanovskis[2]

[1,2]*Baltic Psychology and Management University College, Lomonosova iela 4, Rīga, Latvia*

E-mails:[1]rector@psy.lv; [2]antraru@inbox.lv

Abstract. The article aims to provide analysis of situation, common tendencies and problems of material and non-material personnel motivation in Latvia in the conditions of economic transformation. It is considered that appropriate stimu1ation mechanisms at the company level would facilitate sustainable entrepreneurship process. Authors claim, that meeting material and non-material needs of employees would lead to enhancement of viability of business companies. Motivation systems in various countries are being compared and suggestions formulated.

Keywords: motivation theories, motivation system, labor market, human resources, Latvia

1. Introduction

In the conditions of permanent competition business companies strive to use efficiently resources employed. Sustainable entrepreneurship (Wahl, Prause 2013; Dzemyda, Raudeliūnienė 2014; Tvaronavičienė 2014; Figurska 2014; Wahl 2014; Šabasevičienė, Grybaitė 2014, Tvaronavičienė *et al.* 2014; Raudeliūnienė *et al.* 2014, Vasiliūnaitė 2014) requires paying attention at multiple factors affecting companies' performance and choose respective management tools allowing efficient financial management (Garškaitė-Milvydienė 2014; Baikovs, Zariņš 2013; De Alencar, Almeida 2013), all scope of innovation management (Litvaj, Poniščiaková 2014; Tvaronavičienė 2014), and, of course, well-tuned system of labour force management (Išoraitė 2013; Raišienė, Jonušauskas 2013; Laužikas, Mokšeckienė 2013; Išoraitė *et al.* 2014; Caurkubule, Rubanovskis 2014) is required. In this paper we will tackle employees' motivation mechanism, which is major constitute of labour management system. Labour (employees') motivation is being considered as one of the main factors affecting labour productivity. Motivated personnel is one of preconditions of successful sustainable entrepreneurship, and ultimately, one of factors contributing to sustainable development of industries (Korsakienė, Tvaronavičienė 2014; Tvaronavičienė 2014) and countries (Vasiliūnaitė 2014).

***Research objective*:** to develop proposals to improve efficiency of the use of human resources in Latvia through improvement of motivational mechanisms of personnel management. ***Research tasks*:** to analyze trends in the development of personnel motivation systems in the developed world; to investigate problems with the motivation of staff in the enterprises of Latvia; to make a comparative analysis of methods of motivation used at Western,

Russian and Latvian companies; to develop proposals for improving the system of personnel motivation as an important condition for an effective use of human capital in economic development of the region. ***Object of study*** - labour market of Latvia, ***subject of research*** – motivation of labour at Latvian enterprises. ***Research methodology***: the method of comparative analysis is used in the research, as well as content analysis, and systems methodology and systemic approach are used in developing proposals.

2. Results and discussion

Motivation of personnel is the main mean for providing optimum use of labour resources and for mobilization of existent labour potential. Speaking in numerals, motivation is the process, which leads to detraction of difference between amount of repaid hours and amount of worked hours, and, accordingly advanced to decrease of company expenditures. Notion "motivation" is uncommon for economic science, but during the last years literature published in the field of personnel management revealed interest and contribution of economists. For many years worker, as such, was considered only as the element of production process and approaches to methods of his management were simplified to the level of material elements management, provided process of production. Thus many psycho physiological factors were not considered, eliminated macro environmental influence over workers attitude to the process of work, management decisions were not considered as factor which determine economic success of entrepreneurial company.

Labor productivity is directly affected by employees' motivation. Hence building of efficient motivation system becomes task number one for Latvian employers. According to American scientist Edwin Lock, formation of effective motivation system makes possible to rise productivity of labour by 30 % (according our observations, 90% of all companies, which took part in this investigation experienced increase of productivity by 10 %). Employees at Gallup organization studied 7939 detachments in 36 companies in the world and came to conclusion that key ratios of business profit always ensued high level of workers motivation (Buckinham and Clifton 2001).

Conclusions of London Economic School researches, which took part together with University of Sheffield are based on the following results: personnel motivation gives 19% profit rising, research and output-6%, new technologies-1 % (Gratton 2005). Research of Harvard University in 20th years last century was managed not by economist but by professor of Psychology from Australia Elton Mayo (2007), what signals of importance of physiology in motivation system. Western School traditionally is based on an experiment. And at this time experiment, which was called Hottorn, it for the first time paid attention not to factors of production activity, but to attitude to workers. It gave start to theory of people relations (Mayo Elton 2007) Thus E. Mayo for the first time put in the epicentre management science not economic but psychological tasks. Conversely, it served for rise of whole row of motivation theories: theory "consumer hierarchy of needs" by A. Maslow (1954); theory "x and y" by D. McGregor (2006.); theory ERG by K. Aldelfer (1972) two factors motivation theory by F.Herzberg (1959) theory expectation by V.Vroom (1964); theory fairness by J. Adams (1982) Porter and Lawler (968) and Atkinson (1964) models etc. Achievements of Western management science in this field are evident, however far not all companies are able to accept lessons of new school management. Especially it is topical for small and middle business, which pay too little attention to motivation of their own employees. Many managers still follow simplicity and pragmatism, do not consider necessity systemic approach to motivation tools. Therefore, research task in the area of personnel management is to form gradually understanding of labour motivation process, which is adequate to modern economic development, and to instil awareness about contemporary personnel management.

Motivation in various business systems works via assessment of personnel action that is why it connects psychological and economical aspects. One of the most effective models of assessment working places is methodology of Edvard Hay, which allowed to arrange posts by computing summary grade of post. In ordinary form post is assessed in following way (Ivakina 2009):

**Summary
 grade**   =   Intellectual activity x   responsibility
of the post

44

It has to be noticed, that it is doubtful whether the suggested above methodology can be used in small and middle business companies. "Floating" system of payment has been used in business-systems for years. E.g. in the USA 72,6% of earnings is being received as regular fixed wage; additional part depends on achieved results. The latter part is divided between medical insurance, holiday pay and other payments from "social package" (Motivation and remuneration system). Many psychologists indicate that indirect material stimulation (social package) gives, so-called "effective effect", i.e. promotes collective unite, decreases turnover of personnel. Besides that, such form of motivation usually costs less for company, than direct material distinction. (Spitzer 1995) According some data, typical floating system may raise organizational productivity by 549%, while workers income may increase only by 3-29%. (Zhulina, Ivanova 2007). Individual motivation cannot be mechanically used for collective motivation reasons.

Researches of labour motivation by Tapani Alkula (1990) in Finland show, that for the workers of organization, where they work, organization is the place, where they spend significant part of their time and therefore for them environment and distinction are very important. Looking at the problem about attitude to work, T. Alkula ca1culates index of "workers effort" by formula: s = **w/c,** where w- amount of the working places; c - common amount of the days in a year. For inhabitants of desert Kalahari this index is 0,11 - 0,31, and for at standard European family(2+2) - 0,36 respectively. Looking at the problem of responsibility between work and social life, he uses data about Sweden and Finland. In both states the meaning of work for individual's life has tendency to diminish. In Sweden importance of social life is growing and in Finland because of strong Protestant ethics role of family is increasing (Zhulina, Ivanova 2007). Companies with right approach to motivation strive to coordinate private motives of workers with goals of the company by linking stimulation system to strategic goals of company by introducing KPI (key performance indicators).

Latvia's situation could be reflected by results of sociological inquiry. 550 respondents were chosen. The results indicated that the most powerful stimuli are: wages - 75%, possibility of self-realization - 8%, social status - 7%, communication - 8%. In the research, performed by the company TNS Latvia in 2011-2013, 850 businessmen from Latvia, Lithuania and Estonia were questioned. As it turned out, in Latvia only one third of businessmen considers, that the most important motive for good work must be good wage (in Estonia such managers still less - 25%). The *most* important motive, as considered Baltic managers, is to involve their workers in the decision making process. Further follows necessity to share information with personnel about the plans and goa1s of the company; after that to make positive appreciation and testimonial; and only on the fourth place, among the main motives, is the high wage (Table 1).

Table 1. Forms of personnel motivation in the companies of Latvia, Lithuania and Estonia

No	Factors of motivation	Latvia	Lithuania	Estonia
1.	Involving workers in the process of making decisions	70	77	78
2.	Necessity to share in the information about plans and goals	59	64	58
3.	Positive appreciations and testimonials	32	33	40
4.	Good wages and other material stimulation	30	34	25
5.	Pleasant working environment (premises, equipment)	19	26	31
6.	Interest about personnel work and feelings	28	21	29
7.	Detailed exposition about the importance of their work	29	16	22
8.	Offering of the interesting tasks	25	17	14

Source: According to data of company TNS Latvia (Improvement of a labor market in the country has positive impact on indicators of employees' loyalty).

Researches, carried out by company Eiro Personāls, (Motivational system) show that Latvian managers still do not take into account importance of factors influencing satisfaction at work. E.g. in Great Britain three fourths of inhabitants are satisfied with their work and the great part of respondents (78%) emphasizes that stimulus attract them to their work. As experience of Eiro Personals shows, in Latvia workers more often are not satisfied with the low wages, but there are more factors:
1.- image of the company, which ipacts satisfaction;
2.- managers (style of leadership);
3.- colleagues (atmosphere, or philological climate);
4.- common unsatisfactory while evaluating work conditions.

Table 2. Methods of motivation in the Western, Russian and Latvian companies

Components of motivational package	Frequency of using deductions		
	Russian companies	Western companies	Latvian Companies
Payment of mobile communication	Almost always	Always	Almost Always
Study expenses	Always	Always	Often
Meals	Seldom	Often	Seldom
Transport expenses, company's car	Often	Often	Often
Medical insurance	Seldom	Often	Often
Life insurance	Hardly ever	Often	Seldom
Company's pension plan	Seldom	Often	Hardly ever
Club cards (fitness)	Seldom	Often	Seldom
Material relief	Often	Seldom	Seldom
Deduction system	Often	Seldom	Often

Source: According data of company "Anchor" (Home page of company "Anchor"), firm SN personnel (Home page of agency CN Personnel) and Pedersen & Partners (Home page of agency Pedersen&Partners)

Hence, in order to achieve goals of the company, it is necessary to know how to motivate workers. Other motives then provided above, are: training, making a career, satisfaction with performed work etc.
Below we provide motivation research results of British experts (Table 2).

Conclusions

Motivation is not universal, so *ad hoc* motivation systems have to be build, as he most important aspects of motivation are economical, management and psychological aspects, which in its turn, explain attention to motivational problems such scientific subjects as economic, management and psychology. Such integral approach to the problems of personnel motivation at the end makes synergetic effect during the formation the system of personnel motivation of the company. In its turn, using non-coordinate approach sooner will drive to breaking down, but not to strengthening of personnel motivation to effective work.

The most important factors affecting motivation to work are: mood, climate, culture and informal relations in the company. Motivation is not easy to measure but it is crucial to understand its mechanism and peculiarities. Material and immaterial labor motivation must be flexible enough, but at the same time sustainable, in terms of fostering sustainable entrepreneurship.

References

Adams, J. S., 1982. Inequity in Social Exchange, in Berkowitz, L. (Ed.). *Advances in Experimental Social Psychology*, 267–300. New York: Academic Press.

Alkula, T. 1990. *Work orientations in Finland: A conceptual critique and empirical study of work-related expectations.* Finnish Society of Sciences and Letters.

Alderfer, C. P. 1972. *Existence, Relatedness, and Growth; Human Needs in Organizational Settings*. New York: Free Press.

Atkinson, J. 1964. *An introduction to Motivation.* N.Y., Van Nostrand.

Baikovs, A.; Zariņš, I. 2013. Philosophical, legal and general issues of legal liability, *Entrepreneurship and Sustainability Issues* 1(1): 23–36. DOI: http://dx.doi.org/10.9770/jesi.2013.1.1(3)

Buckinham, M.; Clifton, D. O. 2001. *Now Discover Your Strengths.* New York: Simon&Schuster.

De Alencar, L.M.; Almeida, H.N. 2013. Economic viability and sustainability of solidarity economy enterprises: a case study on the technological incubator of popular cooperatives of the Catholic University of Salvador, *Entrepreneurship and Sustainability Issues* 1(2): 92–98. DOI: http://dx.doi.org/10.9770/jesi.2013.1.2(3)

Garškaitė-Milvydienė, K. 2014. Anti-crisis management of enterprises and possibilities of overcoming their critical condition, *Entrepreneurship and Sustainability Issues* 1(4): 187–203. DOI: http://dx.doi.org/10.9770/jesi.2014.1.4(1)

Litvaj, I.; Poniščiaková, O. 2014.Entrepreneurship and quality management, *Entrepreneurship and Sustainability Issues* 1(4): 204–209. DOI: http://dx.doi.org/10.9770/jesi.2014.1.4(2)

Figurska, I. 2014.Sustainable entrepreneurship: localization, acquiring and use of knowledge sources in competitive organization, *Entrepreneurship and Sustainability Issues* 1(4): 210–222. DOI: http://dx.doi.org/10.9770/jesi.2014.1.4(3)

Wahl, M. 2014. Sustainable Entrepreneurship: The Wolf ButterBack Case, *Entrepreneurship and Sustainability Issues* 1(4): 223–229. DOI: http://dx.doi.org/10.9770/jesi.2014.1.4(4)

Šabasevičienė, V.; Grybaitė, V. 2014. Main foreign direct investment factors as precondition of sustainable entrepreneurship: evidence from Lithuania, Central and Eastern Europe, *Entrepreneurship and Sustainability Issues* 1(4): 230–238. DOI: http://dx.doi.org/10.9770/jesi.2014.1.4(5)

Išoraitė, M.; Steiblienė, L.; Mečėjienė, G. 2014. If obtained professional competences are suitable for sustainable entrepreneurship: case of Vilnius University of Applied Sciences, *Entrepreneurship and Sustainability Issues* 1(4): 239–246. DOI: http://dx.doi.org/10.9770/jesi.2014.1.4(6)

Dzemyda, I.; Raudeliūnienė, J. 2014. Sustainable youth entrepreneurship in conditions of global economy toward energy security, *Entrepreneurship and Sustainability Issues* 1(4): 247–256. DOI: http://dx.doi.org/10.9770/jesi.2014.1.4(7)

Gratton, L. 2005. *Demokraticheskoe ghtdprijatije. Raskreposchenije biznesa blagodarja svobode, gibkosti u priverzhennosti.: Stokgolmskaja shkola ekonomiki v Sankt-Peterburge* [The Democratic Enterprise. Liberating of business through freedom, flexibility and commitment. Stockholm School of Economics in St. Petersburg]

Herzberg, F. 1959. *The motivation to work.* New York, Wiley.

CN Personnel. 2014. [Online] <http://www.cn.ca/en/delivering-responsibly/people>. [Accessed 10 January 2014]

Pedersen&Partners. 2014. [Online] <https://www.pedersenandpartners.com/>. [Accessed 10 January 2014]

Anchor. 2014. [Online] <http://ancorholding.spravka.ua/>. [Accessed 8 January 2014]

Išoraitė, M. 2013. Motivation tools though lenses of prospective employees, *Entrepreneurship and Sustainability Issues* 1(2):116–123. DOI: http://dx.doi.org/10.9770/jesi.2013.1.2(6)

Ivakina, L. 2009. *Upravlenije personalom: Uchebnoje posobije* [Personnel Management: Textbook] Moskva [Moscow].

Korsakienė, R.; Tvaronavičienė, M. 2014. Processes of economic development: case of Lithuanian real estate sector, *Entrepreneurship and Sustainability Issues* 1(3): 162–172. DOI: http://dx.doi.org/10.9770/jesi.2014.1.3(5)

Caurkubule, Ž.; Rubanovskis, A. 2014. Pension system development and the sustainability of the principle of generation solidarity, *Entrepreneurship and Sustainability Issues* 1(3): 173–186. DOI: http://dx.doi.org/10.9770/jesi.2014.1.3(6)

Laužikas, M.; Mokšeckienė. 2013. The role of creativity in sustainable business, *Entrepreneurship and Sustainability Issues* 1(1): 10–22. DOI: http://dx.doi.org/10.9770/jesi.2013.1(2)

Mayo, E. 2007. *The Human Problems of an Industrial Civilization*. N.Y.

Maslow, A. H. 1954. *Motivation and personality.* Harper.

McGregor, D. 2006. *The Human Side of Enterprise.* The McGraw-Hill Companies.

Porter, L. W.; Lawler, E. E. 1968. *Managerial Attitudes and Performance*. Homewood, IL: Richard D. Irwin, Inc.

Raišienė, A.G.; Jonušauskas, S. 2013. Silent issues of ICT era: impact of techno-stress to the work and life balance of employees, *Entrepreneurship and Sustainability Issues* 1(2): 108–115. DOI: http://dx.doi.org/10.9770/jesi.2013.1.2(5)

Raudeliūnienė, J.; Tvaronavičienė, M.; Dzemyda, I. 2014.Towards economic security and sustainability: key success factors of sustainable entrepreneurship in conditions of global economy, *Journal of Security and Sustainability Issues* 3(4): 71–79. DOI: http://dx.doi.org/10.9770/jssi.2014.3.4(7)

Spitzer, D.R. 1995. *Supermotivation.* New York: AMACOM.

Tvaronavičienė, M. 2014. If industrial sector development is sustainable: Lithuania compared to the EU, *Entrepreneurship and Sustainability Issues* 1(3): 134–142. DOI: http://dx.doi.org/10.9770/jesi.2014.1.3(2)

Tvaronavičienė, M.; Šimelytė, A.; Lace, N. 2014. Sustainable development facets: exporting industrial sectors from inside, *Journal of Security and Sustainability Issues* 3(4): 37–44. DOI: http://dx.doi.org/10.9770/jssi.2014.3.4(4)

Vasiliūnaitė, R. 2014. Sustainable development: methodological approaches toward issues, *Journal of Security and Sustainability Issues* 3(3): 69–75. DOI: http://dx.doi.org/10.9770/jssi.2014.3.3(6)

Vroom, V. H. 1964. *Work and Motivation.* New York, Wiley.

Wahl, M.; Prause, G. 2013. Toward understanding resources, competencies, and capabilities: business model generation approach, *Entrepreneurship and Sustainability Issues* 1(2): 67–80. DOI: http://dx.doi.org/10.9770/jesi.2013.1.2(1)

Zhulina, E.; Ivanova, N. 2007. *Jevropeiskije sistemi oplati truda* [European wage system]. Upravlenie personalom (in Russian).

TNS Latvia. 2014. [Online] http://www.tns.lv/ [Accessed 5 February 2014]

Žanna CAURKUBULE – Assoc. Prof., Rector of Baltic Psychology and Management University College, Riga, Latvia. Research interests: social security, pension system, economic policy, sustainable development.

Aleksandrs RUBANOVSKIS – Assoc. Prof. at Baltic Psychology and Management University College, Riga, Latvia. Research interests: social security, pension system, economic policy.