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Science Business Review

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Return to the primary energy
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Biuletyn Projektu
Komercjalizacja wyników badań oraz kreowanie postaw przedsiębiorczych przez Akademię Morską w Gdyni

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AKADEMIA MORSKA W GDYNI

Akademia Morska w Gdyni jest największą państwową uczelnią morską w Polsce i jedną z największych w Europie, kształcącą od 1920 roku oficerów floty handlowej i kadry menedżerskie dla gospodarki morskiej i regionu nadmorskiego. Uczelnia składa się z 4 Wydziałów:
Nawigacyjnego, Mechanicznego, Elektrycznego oraz Przedsiębiorczości i Towaroznawstwa.

W Akademii Morskiej w Gdyni kształci się 6,5 tysiąca studentów w zakresie następujących specjalności studiów: inżynieria ruchu morskiego, morskie systemy transportowe i logistyczne, systemy bezpieczeństwa morskiego, transport i logistyka, transport morski, eksploatacja instalacji przemysłowych, eksploatacja siłowni okrętowych, eksploatacja siłowni okrętowych 2, eksploatacja siłowni okrętowych i obiektów oceanotechnicznych, inżynieria bezpieczeństwa środowiska morskiego, inżynieria eksploatacji instalacji, inżynieria zarządzania remontami, technologia remontów urządzeń okrętowych i portowych, elektroautomatyka, elektroautomatyka okrętowa, elektronika morska, komputerowe systemy sterowania, radioelektronika, systemy i sieci teleinformatyczne, handel i usługi – menedżer produktu, internet i multimedia w zarządzaniu, logistyka i handel morski, menedżer produktów kosmetycznych, nowoczesne narzędzia zarządzania, organizacja usług turystyczno-hotelarskich, rachunkowość i finanse przedsiębiorstw, towaroznawstwo i zarządzanie jakością, usługi żywieniowe i dietetyka, zarządzanie informacją w administracji publicznej, zarządzanie kapitałem ludzkim, zarządzanie projektami Unii Europejskiej, zarządzanie przedsiębiorstwem, zarządzanie zmianą Specjalność – inżynieria eksploatacji instalacji przemysłowych jest od 10 lat wspólnie prowadzona z HOCHSCHULE BREMERHAVEN w Niemczech.

Programy kształcenia spełniają zarówno krajowe standardy nauczania (MN i SW), jak również wymagania Międzynarodowej Organizacji Morskiej (IMO). Kadrę nauczycieli akademickich – ze stopniami naukowymi doktora, doktora habilitowanego i tytułem naukowym profesora oraz najwyższymi dyplomami morskimi kapitana żeglugi wielkiej, starszego mechanika i elektryka okrętowego – wspiera nowoczesna baza laboratoryjna z 25 specjalistycznymi symulatorami oraz wdrożony w Uczelni system jakości kształcenia ISO 9001.

Absolwent Akademii Morskiej w Gdyni kończy studia z kilkoma dyplomami – magistra inżyniera odpowiedniej specjalności, oficerskim stopniem podchorążego Marynarki Wojennej, a absolwent specjalności morskiej dodatkowo z dyplomem oficera marynarki handlowej. Wysoki poziom wykształcenia gwarantuje absolwentom zatrudnienie na globalnym rynku pracy, u najbardziej prestiżowych armatorów świata.

Ponadto Uczelnia prowadzi specjalistyczne kształcenie podyplomowe na kolejne stopnie oficerskie, obejmujące 5 tysięcy absolwentów rocznie.

Trzy Wydziały posiadają prawa doktoryzowania, pozostały zaś – Wydział Nawigacyjny – zmierza do ich uzyskania. Akademia Morska w Gdyni jest armatorem dwóch statków morskich, na których studenci odbywają praktyki morskie:

- znanego na całym świecie żaglowca s/v DAR MŁODZIEŻY, pełniącego również rolę ambasadora Polski w większości portów świata,
- statku badawczo-szkoleniowego m/s HORYZONT II, realizującego również wspólne badania naukowe z Polską Akademią Nauk w trakcie ekspedycji polarnych na Arktykę i Antarktydę.

Ponadto studenci rozwijają swoje zainteresowania żeglarskie w Jacht Klubie Akademii Morskiej w Gdyni.

Działalność Uczelni wspierają: Fundacja Rozwoju Akademii Morskiej, Przedsiębiorstwo Badawczo-Produkcyjne ENAMOR, Studium Doskonalenia Kadr, Academy Maritime Services oraz Fundacja Bezpieczeństwa Żeglugi i Ochrony Środowiska.

Akademia Morska w Gdyni aktywnie współpracuje w realizacji wspólnych prac badawczych, kształceniu kadr naukowych i wymianie studentów bezpośrednio z 18 uczelniami morskimi na świecie oraz w ramach organizacji międzynarodowych – EUROPEAN UNIVERSITY ASSOCIATION (EUA) i INTERNATIONAL ASSOCIATION OF MARITIME UNIVERSITIES (IAMU).

Uchwalona przez Senat Akademii Morskiej w Gdyni strategia jej dalszego rozwoju zapewni umacnianie roli Uczelni jako światowego centrum edukacji i szkolenia morskiego kształcącego profesjonalnych obywateli świata.

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Death of neoliberalism, crisis of competence

Neoliberalism has died a sudden death. The funeral speech has been delivered by Alan Greenspan, the former Federal Reserve Chairman. Alan Greenspan has conceded that the global financial crisis has exposed a "mistake" in the free market ideology. When the congressional committee's Democratic chairman, Henry Waxman, pressed him: "You found that your view of the world, your ideology, was not right, it was not working?" Greenspan added: "That's precisely the reason I was shocked because I'd been going for 40 years or so with considerable evidence that it was working exceptionally well".

Neoliberalism has fallen like many other economic theories transformed by politicians into the solely correct ideologies. The Austrian School, developed in opposition to communism, performed excellently in theory, but worse in American practice. The American government has long since lost its control over the economy and everything went with the wishes of the worshippers of the Austrian School. The economy was duly starting off on command from derivative " producers", financial schemes and speculative bubbles.

Americans have a knack for dropping their crises off to Europeans. We went through that back in 1929. Now since 2008 consecutive waves of financial "tsunamis" fall onto Europe. As during the Great Crisis in the United States Friedrich August Hayek went out of fashion, now after the neoliberal politics' euphoria the American government and the FED have suddenly recalled, that there once lived one John Maynard Keynes and that the best cure for an ailing economy is to print dollars – 40 billion of them each month. Printing up dollars means adding to books virtual money, which serve to buy bonds from the market. This is termed "quantitative easing" (QE).

In the field of "creative economy" Europe has its masters, too. The Bank of England has declared a buy-up of bonds to the sum of 375 billion pounds. The SNB in Switzerland is book-manufacturing tens of billions of pounds, and buying up euros to prevent the frank from excessive appreciation. The printers of virtual money have been joined by the European Central Bank. Mario Draghi, Speaking at a conference in London marking the start of the Olympics, said: "Within our mandate, the ECB is ready to do whatever it takes to preserve the euro. And believe me, it will be enough" – as BBC reported.

Together with the central banks, the PIGS (Portugal, Italy, Greece and Spain) teach other Euro Zone members, how to live off somebody's money. Politicians and bankers behave, as if they have not read a single lesson of economy and are not fascinated any more even by "Economy in one lesson".

The "LIBOR scandal" with the Bank of England and the FED in the background has proved, that money has no passport and no morality. Debates are full of the word "crisis". Do we actuallly have an economic crisis, or a crisis of economics? Or a crisis of competence of politicians, economists, bankers and whole nations?

What do the above considerations have to do with the transfer of knowledge? It is profitable to all participants of the market, when we look at our actions not from a standpoint of short-term gains. It is worthwhile to try and reckon the long-term consequences. And to that, scientific knowledge is indispensable.

In this issue of the "Transfer of Knowledge", we give numerous examples of application of research-based knowledge to practice. Balanced economic development in agreement with the environment is not an idea, but a necessity – argues dr Hanna Kruk, who points out, that : „The environment is one of the economic development and welfare factors". Economic development and the position of a society on the global map are, among others, decided by the level of innovativeness. It so happens, that among the leading innovative societies of the EU, many come from the Baltic Region: Denmark, Finland, Sweden, Germany. The question "What is innovativeness and how to measure it" is addressed by dr Krzysztof Sarnowski.

Today, noone needs convincing, that knowledge is capital. How that capital can be put to practice to organise urban transport, is described in detail by prof. Krzysztof Grzelec and prof. Olgierd Wyszomirski – the Director of the Board of Public Transport in Gdynia. The same transfer from the point of the marketing process is presented by dr Hubert Kołodziejski from the University of Gdańsk, who underlines, that: „The distortion of the market mechanism in the urban transport market puts constraints on its functioning. In seeking high productivity of the urban transport business, one has to create conditions in which there is competition in the supply of the transport services".

Business can not be developed without financial capital. This is especially difficult in developing markets, therefore I highly recommend to the readers the comprehensive study of that issue with respect to the countries of Central Europe, presented by dr Aneta Waśko, Senior Data Analyst from Thomson Reuters Polska.

The economy can not develop without energy. „The energy security issue touches everyone: consumers, energy producers, investors as well as politicians" – writes Krzysztof Szymichowski, director of the Security and Safety Research Institute, explaining the conditions for energy security for today and for the future.

Balanced growth, urban transportation, logistics of waste disposal are challenges to the growing urban agglomerations and their inhabitants. Solutions to growing problems can only be achieved through the transfer of knowledge from various scientific disciplines. Problems can not be solved without knowledge of economics and technology, of logistics and physics etc. An excellent example of a complex application of knowledge to practical problem-solving of a city is the SUGAR Project (Sustainable Urban Goods Logistics Achieved by Regional and local policies). It is presented by Marcin Foltyński and Bartosz Guszczak from the Institute of Logistics and Warehousing in Poznań.

Nowadays, in countries with an individualistic culture, which Poland also belongs to, we can observe the occurrence of two ethical principles that influence the behaviour of individuals - egocentric ethics and hedonism. They influence the general social functioning of an individual as well as the process of making judgements and decisions. The research carried out aimed at verifying the hypothesis of a more positive perception of own morality and integrity after performing an action resulting in a personal gain, is presented by Magdalena Wyszomirska-Góra from the Institute of Psychology of the University of

Gdańsk.

It is said repeatedly, that in politics and economic practice we require competent people. So far, we have managed to build a competence measuring system for enterprises. Its foundations and its model are described by Lech Kunc from the Scientific Society of Organisation and Management in Gdańsk. In the last article, Piotr Grzybowski, a Ph.D. candidate in the Institute of Organisation and Management of the University of Gdańsk, presents the results of the research, whose main aim was determining the way of transferring the marketing knowledge in order to increase the level of competencies, knowledge, skills and professional experience.

Marek Grzybowski
Editor-in-Chief

The environment as an evaluative element of national economic competitiveness

The environment is one of the economic development and welfare factors. There are several methods to evaluate national economies: GDP, level of competitiveness, development of advanced technology and the influence of economy on environment. The aim of this article is to present how the environmental aspect is included in chosen competitiveness reports.

Introduction

The environment as factor of economic development has been often emphasized during the last years. Natural resources and values such as climate, geographic location, presence (or lack) of water and useful minerals determine the state of economy [1]. On the contrary, maladjustment of economic activities to natural capacity, waste of natural resources and increasing environmental pollution has conduced to situation, when the influence the economy on the environment's state is taken into consideration. The idea of sustainable development is increasingly known and widely used. In its development, there are three dimensions of equal rank: ecological, economical and social dimension. Two of the main goals of sustainable development are, first, the possibility and necessity to meet the needs of present and future generations and, second, the maintenance of proper quality of life [2,3].

The term "sustainable development", and its content, has been generalised all over the world, especially in developed countries. Hereby, a lot of attention has been paid to "environment friendliness" of offered goods and the necessity of economy's "ecologisation" ("greening"). It is nowadays one of a number of criteria used in estimation of national economies, for example the Ecological Footprint or the Environmental Performance Index.

Problems of environmental protection are also taken into account in many (but not all) economic reports and rankings that take stock of national competitiveness. Two reports are well known: World Competitiveness Yearbook (report and ranking based on it) published by International Institute for Management Development (IMD) in Lausanne (Switzerland) and report of the World Economic Forum WEF).

1. The environment in IMD Report

According to IMD report (known as World Competitiveness Yearbook), all national economies are assessed in compliance with 331 criteria divided into four main groups. These are [5]:

1) economic performance – 78 factors assigned to five complexes: domestic economy (with following groups: size, growth, wealth, forecasts), international trade, international investment (including investment and finance), employment and prices,

2) government efficiency – group of 71 criteria in following complexes: public finances, fiscal policy, institutional framework (including two sub-groups: central bank and state efficiency), business legislation (such criteria sub-groups like: openness, competition and regulations, labor regulations) and societal framework,

3) business efficiency – 68 criteria assigned to five groups: productivity and efficiency, labor market (this category includes such questions like: costs, relations, availability of skills), finance (with following sub-groups: bank efficiency, stock market efficiency and finance management), management practices, attitudes and values,

4) infrastructure – the biggest complex of 114 factors composed of following groups: basic infrastructure, technological infrastructure, scientific infrastructure, health and environment, education.

Environmental problems in competitiveness report of IMD are taken into consideration as group of criteria linked to basic infrastructure and in separate sub-group together with health. In the first group, factors of estimation are related to (in case of natural resources): surface of a country (measured in km^2), arable land (m^2 per capita), water resources (total internal renewable per capita in m^3), access to water (the problem of access to water as well as the issue whether or not it is adequately ensured and managed), and the question of access to commodities (the category includes, among others, basic resources, food, etc. and the problem of their proper management) [5]. Therefore environmental factors are taken into consideration in 5 of 25 criteria into the sub-group of basic infrastructure.

Between 27 criteria of health and environment sub-group, 16 considering environmental questions. Mainly, the influence of the economy on environment and the environmental state are evaluated. There are criteria linked to [5]:

1) energy use – one estimation criterion relates to energy intensity (measured by quantity of the commercial energy consumed by each USD of GDP in kilojoules),

2) water use – there are two criteria: intensity of water consumption (for each 100 USD of GDP, in m^3) and waste water treatment plants (this factor is evaluated by percentage of population with access to such services),

3) emission of green-house gases with two criteria: carbon dioxide emissions (in m of CO_2) and CO_2 emissions intensity (CO_2 industrial emissions in m^3 per one million USD of GDP),

4) climate change – to estimate the factor, it should be checked if climate change is sufficiently addressed by the government,

5) paper and cardboard recycling rate – measured by the percentage of apparent consumption,

6) applying of the eco-innovation – two criteria: related to use of environmental technologies (so called „green" technologies that can be changed into competitive advantages) and renewable energy sources (the factor is evaluated here by percentage share of such energy in relation to total energy needs),

7) natural environment conditions and interaction between environment and economy – there are four criteria considering the problem: total biocapacity (measured in gha global hectares per capita of biologically productive space in country, ecological footprint (the index determines anthropogenic pressure on environment, includes average energy, food, resources consumption for citizen in relationship to the area of the biologically productive space; also measured in gha per capita), ecological balance (difference between total biocapacity and ecological footprint) and pollution problems (how such problems affect national economy),

8) sustainable development *sensu stricte* – it is checked if the sustainable development is a priority for companies,

9) environmental laws – the estimation is dependent upon the question of law and its implementation, that is whether it harms the competitiveness of businesses or not,

10) quality of life – this criterion does not only relate to social questions (like health) but it is also one of main goals of sustainable development.

The aforementioned estimation's criteria are related to influence of economy on the environment including the problem of adjustment (or the lack of it) of economic activities to nature conditions. Valuated factors concern micro- (enterprises, their priorities) and macroeconomics levels (government policy, environmental law, citizens' quality of life). However, only 21 criteria of 331 taken into account in the IMD method take up environment. It makes only 6,34% of all investigated factors of the national competitiveness.

2. The Environment in WEF report

Another often quoted estimation method is the national competitiveness report *(Global Competitiveness Report)* prepared by the World Economic Forum (WEF). In this report, there are 111 criteria of evaluation divided into twelve groups (the so called pillars of competitiveness). There are ensembles of criteria: institutions (21 factors to estimate), infrastructure (9 criteria), macroeconomic environment (6 criteria), health and primary education (10), higher education and training (8), goods market efficiency (15), labor market efficiency (9), financial market development (9), technological readiness (6), market size (2), business sophistication (9) and, last but not least, innovation (7 criteria). All these 12 ensembles are aggregated into three main complexes. Factors linked to macroeconomic environment, institutions, infrastructure, education and health are recognised as crucial for rapid economic development. Factors related to innovations and business sophistication are important for development of the knowledge-based economy. The remaining factors are fundamental for economy's efficiency [6].

Environmental criteria are not set apart in the WEF competitiveness report. They may be found in such categories as enterprises' ethical behaviour (one of the element of it is corporate social responsibility, especially for environment), ability to innovate firms and the entire economy (in case of eco-innovations, but they are not separated from other innovations). So, the conclusion of the WEF national competitiveness report analysis widely ignores the environmental questions.

3. Environment and competitiveness of european economy

European Commission (Enterprise and Industry DG) prepares the *European Competitiveness Repor*t (precisely, the publication concerns the European Union countries). The topic of each year report is different. For example, in *European Competitiveness Report* 2008, thee themes dominated [4]:

1) general economic development,

2) topical issues on the structural reforms agenda – including: trade costs, question of the EU economy's openness and productivity, economics of the SMEs (small and medium enterprises) and entrepreneurship, Sustainable Industrial Policy and its relation to competitiveness, dependence between competitiveness and corporate

Table 1. Environmental aspects of chosen competitiveness reports. Source: own

Environmental aspects included	Competitiveness Reports		
	IMD	WEF	European Commission
Chosen natural resources	yes	no	no
Capacity and productivity of the environment	yes	no	no
Environment pollution as an effect of economic activity	yes	no	no
Economic use of the environment	yes	no	no
Environmental laws	yes	no	no
Quality of life	yes	no	no
CSR	yes	yes	yes
Ecological innovations	yes	yes *	yes *

* they are not directly isolated from other innovations

social responsibility (CSR),

3) competitiveness at mesoeconomic (sector) leve – related to, among others, market structure, innovation, Research and Development (R&D).

Environment (and the concept of the sustainable development) is taken into account in second and third part of the report. In the second chapter *"Topical issues on the structural reforms agenda"* such questions are described as obstacles for implementation of energy-saving, less harmful for environment, goods and technologies, their impact on green technologies (and eco-innovations), actions for sustainable consumption, production and sustainable industry *(Action Plan on Sustainable Consumption and Production and Sustainable Industrial Policy* prepared also European Commission*)*. Dependencies between CSR (including environment protection) and competitiveness are also presented in the Report. It can be assumed that referring to innovation and R&D (sector's competitiveness) the description also relates to eco-innovation (although, as in the WEF report, this category is not separated from other kinds of innovations).

Instead, in the *European Competitiveness Report 2010,* other factors are presented. That may be associated with current economic problem (crisis), described as growing imbalances in European industry, trade in intermediate products and EU manufacturing supply chains, foreign corporate R&D and innovation in the EU, competitiveness of the EU in key enabling technologies, innovation and competitiveness of the creative industries in the EU [4]. Problems of environmental protection and use of natural resources are mentioned with reference to presenting technology, innovations (mainly related to reducing pollution, use of resources and limitation of their negative economy's effects on environment), especially in cases of key enabling technologies (KET).

Authors of the *European Competitiveness Reports* do not use particular lists of indexes in order to estimate the various measures used, in accordance with topic in a given report. Such method makes impossible to analyse changes in the state of European economy in different years.

Conclusions

In different reports about national competitiveness, environmental questions are treated in different ways. Table 1 (page 5) shows a comparison of environmental aspects considered in the discussed reports.

It should be mentioned that environmental questions are not presented in every EU report. Topics of different reports depend on current problems of global and European economy.

Among the discussed reports, the question of sustainable development and the use of environment are the most precisely presented in the *World Competitiveness Yearbook* despite its relatively little importance. However, only in this report, the questions of natural resources, environment's productivity, pollution, eco-innovation and the environmental laws are considered.

dr Hanna Kruk
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Measurement of innovation

The aim of this paper is provide a definition of innovation and characterization of two selected tools used to measure the innovativeness of states. The first is the array of EU innovation performance and the second Global Innovation Index. Analyses show that a large influence on the indices of innovation is the availability and comparability of statistical data.

Introdaction

Economy wishing to achieve a sustainable and high economic growth should be innovative. The European Union in its latest strategy for 2020 in the second order „Research and development / innovation " determined that 3% of the EU's GDP (public and private combined) should be invested in R&D/innovation. Inclusion of innovation to the main long-term development strategy shows the importance of this complex process. His analysis is not easy because of the multitude of existing definitions and factors taken into consideration. To measure innovation uses a variety of methodologies, of which the most famous are Innovation Union Scoreboard (IUS) and The Global Innovation Index (GII). The purpose of this paper is to present a definition of innovation and the characteristics of the above-mentioned measures are used to measure innovation.

Definitions of innovation

The first mention of innovation can be found in the work of Schumpeter in 1911.[1] Since that time, in the literature, many authors presented their proposals on the importance of this concept. Among them were such R.W. Griffin[2], Ph. Kotler[3], M.E. Porter[4] and Polish authors: S. Gomółka[5], W.M. Grudzewski i I.K. Hejduk[6], S. Marciniak[7], A. Pomykalski[8]. Analysis of the most important definition of innovation can be found in work by W. Janasza i K. Kozioła. Frequently used in international studies, the definition of innovation developed by a team of experts of the Organisation for Economic Co-operation and Development (OECD) and EUROSTAT in „Oslo Manual. Guidelines for collecting and interpreting innovation data". An innovation in Oslo Manual „is the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organizational method inbusiness practices, workplace organization or external relations"[10]. The main types of innovation highlighted by experts from OECD and EUROSTAT are:

1. A product innovation – „the introduction of a good or service that is new or significantly improved with respect to its characteristics or intended uses. This includes significant improvements in technical specifications, components and materials, incorporated software, user friendliness or other functional characteristics "[11].
2. A process innovation – „the implementation of a new or significantly improved production or delivery method. This includes significant changes in techniques, equipment and/or software"[12].
3. A marketing innovation – „the implementation of a new marketing method involving significant changes in product design or packaging, product placement, product promotion or pricing"[13].
4. An organizational innovation – „the implementation of a new organizational method in the firm's business practices, workplace organization or external relations"[14].

It is worth mentioning that the last two items were added innovation in Issue 3 of the Oslo Manual. This demonstrates the high dynamics of the methodological work to broaden the range of issues examined. From the above definitions that unambiguously determine whether the activity is innovative is not at all an easy task. Thanks to the above definitions of institutions involved in data collection on innovation have the same assumptions to conduct the process of gathering information about innovations. Despite the complexity of innovation and a multitude of factors that affect them make them difficult to measure. The following are the basic characteristics of two different tools used to monitor the innovation, the ability to create and innovate.

Innovation Union Scoreboard

Systematic measurements of innovation in the European Union, expressing the estimation of the European Innovation Scoreboard began in 2001. The EU measure of innovation has been subject to continuing change until 2009. The current shape of the methodology and the new name of the Innovation Union Scoreboard 2010 – are a consequence of the need to monitor the implementation of the initiative, guiding strategy „Europa 2020"–„ Innovation Union". The purpose of IUS 2010 is the ability to provide comparative assessment of the innovation performance of the EU27 Member States and the relative strengths and

[1] Schumpeter J., Teoria rozwoju gospodarczego, PWN, Warszawa 1960, s. 104.
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[10] OECD/EUROSTAT, Oslo Manual. Guidelines for collecting and interpreting innovation data, Third edition, OECD, 2005, p.. 46.
[11] Ibid. p. 48.
[12] Ibid. p. 49.
[13] Ibid. p. 49.
[14] Ibid. p. 51.

weaknesses of their research and innovation systems. In addition the overall ambition of the Innovation Union Scoreboard is to inform policy discussions at national and EU level, by tracking progress in innovation performance within and outside the EU over time[15].

Analyzed until the Innovation Index uses 25 indicators grouped into three main types and 8 innovation dimensions. Detailed summary of the main types, dimensions, 25 indicators of innovation and innovation to the table 1.

It should be noted that the basis for determining the innovation index IUS 2010 data were obtained from Eurostat and other sources to ensure reliability. Time range from which data were obtained to calculate the innovation indicators ranged from 2007 (4 indicators) through 2008 (10 indicators) until the year 2009 (10 indicators). Such a large span of time the information obtained could help to delay changes to the index in relation to changes in the economy. Indicator 3.1.3 not been appointed in the absence of adequate data quality, and therefore it was not taken into account in determining the aggregate measure of innovation. Indicators of innovation in the IUS in 2010 were designated for the 27 EU Member States, as well as for Croatia, Iceland, the Former Yugoslav Republic of Macedonia, Norway, Serbia, Switzerland and Turkey. Measures of innovation used to compare the EU-27 with the United States, Japan and Brazil, Russia, India and China (BRIC) have been calculated on the basis of a limited number of indicators.

The Global Innovation Index

The Global Innovation Index has already been appointed to four times. The first edition of the publication containing the innovation rankings were published in 2007. The creator of the latest edition of the GII is a business research consortium composed of the following institutions: INSEAD The Business School for the World, Alcatel-Lucent, Booz and Company, Confederation of Indian Industry and World Intellectual Property Organization (WIPO). The goal of GII defined already in 2007 was determining how to find metrics and approaches to better capture the richness of innovation in society and go beyond such traditional measures of innovation as the number of PhDs, the number of research articles produced, the research centres created, the patents issued, and research and development (R&D) expenditures. GII is determined on the basis of analysis of the 20 factors, grouped into 7 categories, which in turn affect the two sub-indices. A summary of all the factors in Table 2 contains the GII

GII includes as many as 125 countries. Used to calculate factors are therefore a compromise between the available data on the appropriate level of credibility and the latest results of research on innovation and its determinants.

Table 1. Summary of the factors used to determine the level of innovation in the IUS 2010

Main type	Innovation dimension	Indicator
ENABLERS	Human resources	1.1.1 New doctorate graduates (ISCED 6) per 1000 population Aged 25-34 1.1.2 Percentage population aged 30-34 having completed tertiary education 1.1.3 Percentage youth aged 20-24 having attained at least upper secondary level education
	Open, excellent and attractive research systems	1.2.1 International scientific co-publications per million population 1.2.2 Scientific publications among the top 10% most cited publications worldwide as % of total scientific publications of the country 1.2.3 Non-EU doctorate students [1] as a % of all doctorate students
	Finance and support	1.3.1 Public R&D expenditures as % of GDP 1.3.2 Venture capital (early stage, expansion and replacement) As % of GDP

[15] INNOVATION UNION SCOREBOARD 2010 The Innovation Union's performance scoreboard for Research and Innovation 1 February 2011 p. 3.

Table 1. Summary of the factors used to determine the level of innovation in the IUS 2010

Main type	Innovation dimension	Indicator
FIRM ACTIVITIES	Firm investments	2.1.1 Business R&D expenditures as % of GDP 2.1.2 Non-R&D innovation expenditures as % of turnover
	Linkages & entrepreneurship	2.2.1 SMEs innovating in-house as % of SMEs 2.2.2 Innovative SMEs collaborating with others as % of SMEs 2.2.3 Public-private co-publications per million population
	Intellectual assets	2.3.1 PCT patents applications per billion GDP (in PPSÄ) 2.3.2 PCT patent applications in societal challenges per billion GDP (in PPSÄ) (climate change mitigation; health) 2.3.3 Community trademarks per billion GDP (in PPSÄ) 2.3.4 Community designs per billion GDP (in PPSÄ)
OUTPUTS	Innovators	3.1.1 SMEs introducing product or process innovations as % of SMEs 3.1.2 SMEs introducing marketing or organisational innovations as % of SMEs 3.1.3 High-growth innovative firms
	Economic	3.2.1 Employment in knowledge-intensive activities (manufacturing and services) as % of total employment 3.2.2 Medium and high-tech product exports as % total product exports 3.2.3 Knowledge-intensive services exports as % total service exports 3.2.4 Sales of new to market and new to firm innovations as % of turnover 3.2.5 License and patent revenues from abroad as % of GDP

Source: own study based on INNOVATION UNION SCOREBOARD 2010 The Innovation Union's performance scoreboard for Research and Innovation 1 February 2011 p. 6 - 7

Table 2. Summary of the factors used to determine the level of innovation in the Global Innovation Index

Global Innovation Index						
Innovation Efficiency Index						
Innovation Input					Innovation Output	
Institutions	Human capital and research					
Political nvironment	Education					Creative intangibles
Regulatory environment	Tertiary education					Creative goods and services
Business environment	Research & development					

Source: own study based on The Global Innovation Index 2011 Accelerating Growth and Development p.. 9.

Comparison of results GII and IUS

In Table 3 are presented the names of the 10 most innovative countries in the two analyzed measuring innovation methodologies.

No.	GII 2011	IUS 2010
1.	Switzerland	Switzerland
2.	Sweden	Sweden
3.	Singapore	Denmark
4.	Hong Kong (SAR)	Finland
5.	Finland	Germany
6.	Denmark	United Kingdom
7.	USA	Belgium
8.	Canada	Austria
9.	Netherlands	Netherlands
10.	United Kingdom	Ireland

Source: own study based on INNOVATION UNION SCOREBOARD 2010 The Innovation Union's performance scoreboard for Research and Innovation 1 February 2011 str. 14 oraz The Global Innovation Index 2011 Accelerating Growth and Development p. 18 19.

Analyzing the above table should be taken into account that the indices studied different groups of countries analyzed. Although the two classifications of first and second place was achieved by those same countries or Switzerland and Sweden. As many as six European countries found themselves in the two classifications in the top ten. It is a pity that the IUS 2010 does not include innovation ranking takes into account the analyzed countries outside Europe. This would allow a comprehensive comparison of classification results performed on the same sample.

Presented indexes unfortunately do not show differentiation innovation within individual countries. It can be assumed that a higher level of innovation is lower agromeracjach a low-urbanized areas.

It should also be noted that one of the largest and fastest growing economies in the world that China is characterized by a relatively low level of innovation that is in GII position 29, and the average level of innovation IUS was 55% worse than the performance of the EU-27.

SUMMARY

Due to the fact that innovation is widely regarded as one of the most important factors of economic growth, are conducted throughout the world continually work and research on better knowledge of this phenomenon. Presented at the work level of innovation in research methodologies differ in many respects. These differences are largely a consequence of the availability of data and the factors taken into account. IUS is intended primarily for EU countries, and therefore not analyzed in this study are from other continents, countries play a smaller economic role. Analyses show that a large influence on the indices of innovation is the availability and comparability of statistical data. In order to improve the ability to construct rankings of innovation it is necessary to implement the largest possible number of countries in the world of unified standards for collecting data on innovation. It is reasonable to further modify existing and create new indexes describing the level of innovation at both the country as well as in discrete subregions within the countries surveyed.

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The Global Innovation Index 2011 Accelerating Growth and Development, Fontainebleau 2011.

Knowledge as Capital. Using the Example of the Board of Municipal Transportation in Gdynia

Abstract

Knowledge constitutes the foundation of innovativeness in economic processes. New products and concepts in services and management come as a result of the implementation of knowledge. The Board of Municipal Transportation in Gdynia (BMT) serves as an example of the implementation of contemporary knowledge in the managerial and organisational processes in public transportation. The company's staff combines the roles of researchers and managers. and in doing so they verify their theoretical knowledge in business practice. The scope of the utilisation of academic knowledge encounters certain formal barriers which result from the fact that BMT Gdynia functions as a budgetary unit.

Key words: knowledge, capital, public utility activity, municipal transportation

Introduction

Knowledge, alongside capital, becomes the basic factor of production in contemporary society. Knowledge stands for valuable, accepted information which integrates data, facts, and often hypothesis. It is an ability to gain and posses information and to utilise it in the future. It defines a capability to take effective action in ones environment. It is a cognition and understanding, which are achieved through individual experience and studies of information and data (meaning: unprocessed facts, numbers, and events which, when analysed, may constitute for useful information).[1]

The importance and possibilities of using knowledge as a factor of production

Knowledge is a source of innovations in economy, which determine the development and services as well as changes in the organisation and management of enterprises aimed at the increase of its efficiency. The utilisation of knowledge by an organisation results from the fact that it allows for a decrease in the level of uncertainty whilst accomplishing hazardous ventures. Knowledge itself can become a product, it can take the shape of a particular product or service and, therefore, it may be copied. The ability to gather and utilise knowledge constitutes the basic competence of an enterprise, which may provide a constant market advantage.[2]The key competences of an enterprise are formed by the management systems whilst the general skills of employees, norms, and organisational values are formed by knowledge. The competence of employees determines the key competence of an enterprise.[3] Despite the fact that intellectual capital is not encompassed in a company's assets, it is gradually becoming equally important as financial capital, since it influences the market value of a company. It can be said, therefore, that knowledge is information of a 'positive value' which is obtained by processing information and placing it in a particular context, important for the interested party.

Knowledge management, which is based on the abilities to utilise the possessed intellectual capital, is mostly defined as the process of creating and the employment of knowledge for a more effective activity. It may be also understood as management of information, knowledge, and experience resources obtained in the process of their creation; gathering; storing; study; processing; implementation; and making the knowledge available to the public, in order to create a more efficient work environment.[4]

Polish enterprises show a varied inclination to invest in knowledge leading to innovativeness of business activity. The inclination is determined by the following factors[5]:

- size of an enterprise,
- line of business,
- the management's level of knowledge,
- financial potential,
- scope of activity.

Cities create a favourable environment for the utilisation of knowledge in the accomplishment of business processes. Apart from the marketing component, the possibility to use scientific and research potential constitutes another factor conditioning the location of enterprises in cities, agglomerations, or their vicinity. Cities, together with their sphere of municipal services, become a peculiar testing ground for new products and services, fulfilling the function of research and industrial centres.

The employment of knowledge in the public utility activity by the Board of Municipal Transportation in Gdynia

Urban transportation in Gdynia is an example of the employment of knowledge in the public utility activity.

The Board of Municipal Transportation (BMT) was established in 1992 as the organiser of urban transportation, independent from the service providers. Creation of BMT in Gdynia came as a result of Gdynia's authorities search for a contemporary solution in the scope of management and organisation of urban transportation, which would at the same time allow for market facilitation of this type of public service, as well as for a significant improvement of the services provided.

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[1] A. Górski: Człowiek edukacja wiedza jako elementy kapitału intelektualnego. Zeszyty Naukowe Wyższej Szkoły Pedagogiki i Administracji w Poznaniu. Nr 3/2007,s. 12

[2] B. Krommer: Wiedza jako podstawowy czynnik funkcjonowania organizacji inteligentnych. [W]: Wiedza jako zasób strategiczny przedsiębiorstwa. Pod red. E. Skrzypczak, UMCS Lublin 2008, s. 18-23.

[3] Kapitał ludzki a konkurencyjność przedsiębiorstw, praca zbiorowa pod red. M. Rybak, Poltext, Warszawa 2003, s.19.

[4] A.Górski: op.cit, s. 13.

[5] S. Szultka: Jak jest? Jak będzie? O innowacyjności polskich przedsiębiorstw [W]: Nauka a gospodarka. „Pomorski Przegląd Gospodarczy" 2008, nr 4(39), s. 13.

The relationship between science and business practice were employed already at the stage of creation of the BMT. The concept of appointing and the functioning of an organiser of urban transportation was prepared by the researchers of the University of Gdansk. They have created, based on the theoretical knowledge of microeconomics and transport economics together with practical experience, foundations for the organisational and management rules for urban transportation in Gdynia and neighbouring administrative districts.

The need to create a favourable environment for competition, by means of market facilitation of transport services was the main assumption of the concept. Market facilitation of urban transportation is able to provide anticipated results mainly through optimisation of the service cost as a part of the transport offer. This occurs as a result of competition between the service providers, who compete for transport contracts. The structure of private ownership of service providers may pose a threat to the optimisation of costs. In a situation where a carriage company is owned by the city, there is a risk that the organiser may attempt to ensure such a provider has a certain share in the market, in order to avoid financial loss connected with the incomplete utilisation of its transport potential. From the point of view of optimisation of costs, it is more beneficial for the transportation service to be provided by privately owned companies, provided that there would be strong competition between them.

Gdynia's authorities decided to introduce a regulated competition model (Swedish model) In order to avoid deregulated urban transportation (British model).[6] It assumes functioning of an organiser independent from the service providers, which would employ them by means of open tender procedures. Implementation of the model allowed for market verification of costs of the transportation services, whilst, at the same time, it enabled an integrated transportation offer to remain available to passengers. It proved to be specially important to achieve the goals of transportation policy, realised in the environment of increasing competition posed by private vehicle ownership.

Analogically, the organiser of urban passenger carriage functions as a shipper of goods. Their task is to associate scattered demand with a focused supply of service. They, therefore, function on the market on behalf of the passengers, buying transportation services as part of their open tender procedures.

The urban transportation market does not function autonomously but is subject to State regulations. It constitutes an object of interventionism of the public government which, in turn, constitutes a subject. The public utility proves to be the reason for interventionism on the transportation market. Services provided as a part of transpiration services can be defined as[7]:

- available on the basis of equal rules, accessible to the public,
- being economically accessible for the vulnerable groups of society,
- having principal meaning for the society or certain social groups,
- being provided or requested by the appropriate public authority.

Public authorities accomplish certain goals of social and transportation policy through urban transportation by the means of discounts and entitlements to free transport as well as by realising transportation services in the areas and during periods of time, which generate their financial deficit. This determines a necessity to fund urban transportation from the budget. The role of the BMT is to ensure that those means will be allocated in a sensible way, related to the quantity and quality of services provided.

Amongst the tasks realised by the BMT in Gdynia are:

- researching the market of urban transportation,
- development planning for the urban transportation,
- creating timetables,
- issuing and selling tickets (exclusive rights),
- ticket inspection,
- promotion of services,
- examination of economical efficiency of particular routes,
- preparing tariff assumptions and plans,
- assessing the essential funding level for the urban transportation services,
- contracting service providers by the means of open tenders,
- making payments for the transportation services provided,
- qualitative and quantitative inspection of the realisation of contracts,
- preparing and announcing information on the functioning of urban transportation (including so-called 'bus stop information);
- constructing and maintaining of bus stop shelters,
- providing advertising services using the urban transportation devices, excluding transportation means,
- influencing the reproduction of an urban transportation fleet.

From the beginning of its activity, the Board of Municipal Transportation in Gdynia focused on the relationship between theory and business practice. Leadership always belonged to two researchers. The chairmen's combined function of researchers and business practitioners enabled them to use theoretical knowledge in practice, as well as to employ staff from amongst the university graduates in the first years of BMT operation. Currently they are entrusted with managerial positions. MNT in Gdynia employs 55 graduate workers, which constitutes 80% of administration staff and approximately 40% of the total number of VBMT employees.

Three employees of BMT in Gdynia are both researchers and business practitioners. Publications written by BMT employees, which combine theory of economics with business practice, constitute respected research and academic sources of practical significance.

Implementation of a number of personnel management methods is difficult in formal respect, due to the fact that BMT in Gdynia functions primarily as a budgetary enterprise, and secondly as a budgetary unit. BTM's incentive scheme is subject to the remuneration system of the local government, characteristic for the budgetary units, as well as restrictions resulting form the Public Finance Law are understandable from a formal and legal point of view. They are, however, difficult to approve of considering the economic efficiency of management. As the boards of municipal transportation fulfil most of their functions through typically business activities, such state of affairs is constantly criticised in many academic publications, including those written by BMT employees.

Despite many barriers, BMT in Gdynia, as a part of HR policy, implements solutions which are the subject of research in many academic works. In example, the work of ticket inspectors is verified and evaluated using the 'mystery customer' method. The research was commissioned to a company which uses the academic achievements in the fields of psychology, sociology and management.

Market research constitutes one of the pillars of Gdynia's BMT activities. Findings influence and become the basis of the transportation services offer. The employees of BMT in Gdynia prepared a handbook for

[6] O. Wyszomirski: Modern urban transport systems In Europe.[W]: Innovative perspective of Transport and Logistics. Edited by J. Burnewicz. Wydawnictwo Uniwersytetu Gdańskiego, Gdańsk 2009,s. 189-201.

[7] I. Bergel: Usługi publiczne w transporcie pasażerskim. „Przegląd Komunikacyjny" 2008, nr 12, s.11, [za:]
B. Liberadzki: Public Service Regulation: the political context, New Legal Framework for Passanger Traffic in Europe: Policy implication and implementation constrains Conference documents, Warsaw, 5-th March 2008.

market research in urban transportation which was drawn from both their theoretical knowledge and experience. Research carried out in Gdynia by BMT includes full objective scope, meaning: evaluation of transportation demand as well as preference and transportation behaviour research. The aim of such research is to determine the parameters of transportation services which would meet the requirements of passengers as well as exploitation and economic effectiveness of urban transportation in relation to particular lines or even routes. Research into transportation demand, preferences, and transportation behaviours are conducted every two years in households whilst research into demand are carried out on board vehicles on an annual basis. The original method of research and analysis of data is a result of a research study of Gdynia's BMT employees.

Initially market research was conducted by students from local Universities employed by BMT Gdynia. This enabled a practical verification of theoretical knowledge gained during lectures. Part of the students used the data gathered during research as the basis for their master thesis. Some of them became permanently involved with the Board and secured themselves a position within. Unfortunately, the Public Procurement Act requires that the transport organiser will conduct open tender also in this sphere of its activity, despite the fact that the direct employment of students by the organiser often guaranteed a lower cost of research and a higher quality of survey.

The results of market research are applied not only in the work of BMT in Gdynia. Methodology of study, formulated by BMT employees, found its implementation in demand research, determination of the level of budgetary funding, as well as optimisation of transportation offer in other Polish cities: Słupsk, Gorzów Wielkopolski, Zielona Góra, Zamość, Lublin, Olszyn, Piotrków Trybunalski, Koszalin, Świdnica or Piła, amongst others.

Method and techniques of market research used by BMT Gdynia are in most cases based on classic measurement tools (questionnaires, check charts). New measurement technologies offered on the market, such as gates counting the number of passengers boarding a vehicle or systems of multiple usage, which allow for their implementation in research (e-ticket) remain within the interest and financial reach of BMT Gdynia. Their implementation, due to flaws, is restricted in research of particular market segments.[8]

BMT Gdynia aims at adjusting transportation services to the preferences of passengers whilst determining parameters of transpiration services purchased on the market. The preferences were included in the ranking of passengers' requests identified on the basis of results of market research. The most significant expectations are as follows:[9]

- directness,
- frequency,
- punctuality,
- accessibility,
- convenience,
- low costs.

The system of coordination of timetables constitutes a significant achievement of BMT Gdynia, which was based on market research. BMT developed the concept of coordination tables and began putting it into practice in 1993. By doing so it achieved a complex coordination of timetables in the scope of its own transportation network.

From the beginning of its existence, BMT Gdynia assumed market focus in its management. In practice, this focus includes actions which are aimed at:

- sustaining and preserving competition on the transportation market, facilitation of a flexible approach in adjusting the transportation offer to the needs and preferences of residents,
- focus on the customer (passenger), which requires a constant increase in customer satisfaction,
- coordination of market activities (suitable planning and conducting of activities within the company, i.e. training and motivation of employees, organisation of the company's activity),
- sustaining a particular level of economic efficiency guided by the rule that the shape of the transportation offer should be influenced purely by economic, social, and transpiration policy factors, especially in the conditions of partial funding of urban transportation.

The customer, their needs and demand created as a result, constitutes a starting point for activities taken as a part of market focus. BMT Gdynia, being an organiser whose entire focus is directed at the customer, is a provider of transportation services which recognises expectations, needs and satisfaction of the customer as priorities. BMT Gdynia has a model marketing strategy which consists of:

- company's mission,
- general and directional objectives,
- identification of market position and main competitors,
- SWOT analysis,
- conduct on the market
- principles of product, price, distribution and promotion development,
- principles of organisation, control and audit of marketing management.

BMT Gdynia implements innovations deriving from exact sciences (economics, sociology, and psychology), on top of those of the social sciences.

As an organiser, BMT Gdynia, accomplishing statutory actions, aims at the implementation of contemporary solutions increasing the quality of public transport services. In turn, the Board determines their parameters and decides on the level of their functionality by purchasing the same services on the market. This market function determines the large scope of managerial activities carried out by BMT in Gdynia, including marketing activities. Public utility of urban transportation requires BMT to implement certain procedures connected with the manner in which public funds are spent (in order to maximise its public utility).

BMT Gdynia assumes the responsibility for the process of commercialisation of the innovative products introduced into urban transportation. Therefore, employees of the organiser need to be knowledgeable about the most recent products (on the market), to a level which enables them to make the right decision, not only from a formal and legal but also a marketing point of view.

The e-ticket system, introduced in urban transportation, can serve as an example of the implementation of contemporary technology. An electronic prox card is counted amongst the contemporary systems of conducting financial transactions, including processing payments within urban transportation. It comes in the form of a card manufactured from plastic in accordance with ISO regulations regarding smart cards. It embeds an electrical circuit, equipped with a microprocessor which allows data to be generated and its interchange between the card and a ticket validator equipped with a card reader.

[8] Szerzej w: K. Grzelec.: Bilet elektroniczny jako instrument integracji komunikacji miejskiej w aglomeracji gdańskiej. Szanse, uwarunkowania funkcjonalne i bariery. „Biuletyn Komunikacji Miejskiej" 2005, nr 86.

[9] Preferencje i zachowania komunikacyjne mieszkańców Gdyni w 2008 r. Raport z badań marketingowych. ZKM w Gdyni, Gdynia 2009.

Modern prox cards are equipped in microprocessors consisting of 16 integrated circuits which enable their multi-purpose usage. The card used as a ticket in urban transportation is characterised by the following features:

- simplicity in processing payments by the passengers,
- tariff versatility (possibility to purchase unlimited trip passes as well as multi-trip passes for the same card)
- the possibility to use the services of many providers without the necessity to purchase a number of different tickets (ticket integration)
- the possibility of swift locking of a lost card,
- simplified and unambiguous ticket inspection,
- the possibility of using the service with different tariff systems (varied travel costs and different tariff types: periodical, unified, zone, and divided to sections),
- the possibility for the urban transportation organiser to provide clear and credible settlements,
- virtually eliminating forged tickets (good security systems),
- an appropriately designed payment system will provide the possibility to obtain detailed information on passenger currents, economic and financial effectiveness of particular routes, as well as on the volume and structure of passengers,
- decrease in paper usage.

BMT Gdynia, guided by the rules governing the implementation new products, prior to making a decision on the introduction of e-ticket in Gdynia's transportation, conducted market research which aimed at identifying the features of such a system, which would be meet the expectations of passengers. This enabled the organisers of transportation in other cities to avoid mistakes whilst implementing similar systems as they would have a negative influence on the attractiveness of urban transportation.

Modern low floor busses and trolley busses constitute the most tangible proof of modern technology solutions implemented in the urban transportation, that allow for the adjustment of the transportation offer to meet the requirements of the passengers. The construction solutions applied in those vehicles significantly increase the comfort of travel as well as their reliability. Also important is the green factor of such technology. Diesel engines used in the newest generation of vehicles (Euro5) came as a result of years of study, which allowed for a significant decrease in fume toxicity (Table 1).

Gdynia is also the metropolis's forerunner in the utilisation of Compressed Natural Gas (CNG) in combustion engines on busses. Busses with gas engines, operating within BMT Gdynia's fleet, meet the most rigorous requirement of emission standards EEV (Enhanced Environmentally Friendly Vehicle). Apart from the benefit resulting from the good emission standards, the CNG busses produce lower noise levels, even up to 7 dB.

Additionally, amongst the benefits of CNG are[10]:

- there is no emission of fuel to the atmosphere during fuelling,
- no breathing of reservoir effect whilst not in motion, as is the case with petrol or diesel fuels,
- no risk of soil or water pollution by the spilled fuel,
- increase of the engine's longevity due to the gas mixture,
- decrease in the number of fuel delivery lorries due to a system of pipes.

From September 2007 until December 2009, exploitation of CNG buses in Gdynia enabled to lower the emission of[11]:

- nitrogen oxides – by app. 700 tonnes,

Table 1. Requirements of emission standards

Type of emission	Euro 1	Euro 2	Euro 3	Euro 4	Euro 5	EEV
CO [g/kWh]	4,50	4,00	2,10	1,50	1,50	1,50
HC [g/kWh]	1,10	1,10	0,66	0,46	0,46	0,25
NOx [g/kWh]	8,00	7,00	5,00	3,50	2,00	2,00
PT [g/kWh]	0,61	0,25	0,10	0,02	0,02	0,02
Smoke [g/kWh]	-	-	0,80	0,50	0,50	0,15

source: http://www.truckfocus.pl z dn. 26.11.2010

[10] L. Kornalewski, J. Malasek: *Problemy wykorzystania sprężonego gazu ziemnego w miejskim transporcie zbiorowym.* „Transport Miejski i Regionalny" 2010, nr 10, s. 40.
[11] L. Kornalewski, J. Malasek: *Autobusy zasilane gazem ziemnym w miejskim transporcie zbiorowym w Polsce.* „Transport Miejski i Regionalny" 2010, nr 10, s. 47.

- carbon oxides – by app. 610 tonnes,
- carbon dioxide – by app. 175 tonnes
- diesel particulate matter – by app. 865 tonnes,
- aromatic hydrocarbons – by app. 790 tonnes.

Cutting down the costs of exploitation, followed by a relatively high volume of exploitation work, enabled a return of the cost of purchase of CNG busses after two years of exploitation.

Contemporary technological solutions were also implemented in trolley transportation. B,T Gdynia purchased 30 modern, low-floor trolleybuses equipped with batteries allowing them to travel 10 km without support from the traction power network. 28 of the vehicles were partially funded by the EU as a part of the project for the Development of pro-ecological public transportation in the Area of Tricity's Metropolis, co-created by employees of BMT Gdynia. The project was awarded marks from the EU grant jury for, amongst others, the soft effects of the programme, based on realisation of a complex educational programme entitled “Mum, Dad, I choose eco-transportation” in the schools and nurseries of Gdynia. BMT Gdynia participated in the preparations for the projects, as well as in previous programmes co-funded by the EU (i.e. Civitas Tellus), in the scope of the fundamental part of the trolleybus project, using results of their own research in the analysis.

For many years the main subject discussed in the urban transportation of the Gdansk Gauge Metropolis was the issue of the integration of public transport. BMT Gdynia Employees proposed a concept of integration in the early 90', which was not introduced due to political reasons. In the next 10 years, a number of articles, papers, and studies were published by the management of the BMT Gdynia, all devoted to the issue of the unification of public transport within the Tricity. A number of solutions presented in the texts enabled the local governments to choose one that would consider the interests of all parties as well as an independent character of decision making process in the scope of the transportation system organised by independent boards. The integration model currently in place, which was formulated mainly by the specialists at BMT Gdynia, is based on the Metropolitan Transportation Union for the Gulf of Gdansk and it expresses:

- the aspirations of specialists to maximise the integration of public transportation,
- formal and legal restrictions preventing integration,
- economic and financial barriers impeding implementation of certain solutions, beneficial for the passengers, as well as a sustainable transport development strategy,
- political and organisational barriers, manifested in the independent decisions of local governments in the scope of certain organisational and managerial aspects for the public transportation taken in spite of the integration determinants.

Conclusion

The way in which the Board of Municipal Transportation in Gdynia, established in 1992, functions, is a manifestation of the implementation of knowledge in practice, including academic achievements of its employees. The uncommon structure of this unit was formed owing to that knowledge, which was creatively implemented in:

- complex market research of urban transportation services,
- forming timetables based on the coordination tables,
- creation of the market strategy on the urban transportation organiser,
- distribution of services based on the e-ticket,
- introduction of modern, as well as green, bus and trolleybus fleet,
- promotion of services amongst children and youth,
- integration of the urban transportation in the Metropolitan Area of the Gulf of Gdansk.

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Business with venture capital in Poland versus Central and Eastern Europe

Doing business in a changing environment is not an easy task. It requires a lot of engagement, skills, bright ideas and money. Building a prosperous business is an ambition of many entrepreneurs. The major barrier to start or develop business is lack of capital. The financial support can come from different sources, including banks, local authorities or EU grants. Unfortunately, these means are not available for every company. Venture capital and private equity in general is a solution for many of them. It is more and more an important source of capital to help businesses to grow.

Central and Eastern Europe (CEE[1]) has made substantial progress in recent years in its economic development. These nations offer increasing private equity opportunities and have potential for development of many businesses. The willingness and need to invest of managers is high, but there is an obstacle of lacking financial means. Deal opportunities in CEE were provided by privatisation process, which was an early catalyst for private equity development. This attracted a lot of private equity professionals and built the base of local knowledge. Poland is one of the most active countries in the region in private equity transactions. It is connected with strong entrepreneurial culture and well developed deal infrastructure. However venture capital transactions are a minor part of this activity. The question is if it is connected with high risk or lack of innovative business ideas.

The idea of venture capital

According to the Polish Private Equity Association (PPEA[2]) "private equity provides equity capital to enterprises not quoted on any stock market. Private equity can be used to develop new products and technologies, to expand working capital, to make acquisitions, or to strengthen a company's balance sheet. It can also resolve ownership and management issues, such as succession in family-owned companies, or the buyout/buy-in of a business by experienced managers. Venture capital is, strictly speaking, a subset of private equity and refers to equity investments made for the launch, early development, or expansion of a business." It is not available for every company. Venture capital investors are only interested in companies with high growth potential representing various industries, regions and at different stages of development. PPEA names few features of businesses which are in the interest of venture capital firms:

- have good management
- offer better products, services or have a technological strength over their competition
- operate within a growing market
- grow faster than their industry
- have a strong market share

Venture capital firms provide not only finance, but also strategic advice, expertise, business contacts and information at crucial stages of company development. If a business idea meets the expectation of a venture capital fund, the company can receive several million Euros in investment. In exchange, the fund becomes the shareholder of the company. It is worth underlining that this is a form of providing capital, not debts. The goal of venture capital is to invest in the company with an injection of cash and know-how that will help it become a prosperous business. Venture capital brings a company about an increase and then sells it with high profit to another investor. The average annual return of fund is expected in the range of 25% and up[3]. This transaction is long-term and high-risk. The highest risk is at early stages of company development. Venture capital usually finances businesses which are too risky for banks. As a consequence, it is closely associated with the high-technology sectors and is seen as cornerstone of innovation. The average period of financial support usually lasts 3-7 years. Venture capital has 5 characteristics, namely[4]:

- it is a financial intermediary, meaning that it takes the capital from investors and invest it directly into portfolio company
- it invests only in private companies, that means that companies are not immediately traded on a stock exchange once investment is made
- venture capital is active in helping company to grow
- the basic objective of venture capital is to maximize its return by a sale or an initial public offering
- it invests in order to finance the internal growth of companies

As stated above, venture capital firms are interested in various companies at different level of their development. This subset of private equity is connected with young companies. There are 3 main development stages of venture capital-backed companies: seed, start-up and later-stage venture. To finance seed stage means providing capital to research, asses and develop an initial concept before a business has been launched. It means investing in the idea and not a particular company. This stage is the highest risk for venture capital. For start-up companies investments are provided for product development and initial marketing. Theses businesses are in the phase of being set up or may have existed for a short time, but they have not sold their products commercially. Later-stage venture means financing the expansion of an operating company, which may or may not be breaking even or trading profitably. This tends to finance companies already backed by venture capital, and therefore involves subsequent rounds of financing.

The advantages of venture capital for business

Venture capital is a very beneficial way of providing capital in comparison to the other forms of financing. The most common method of

[1] CEE comprises of the countries of Bosnia and Herzegovina, Bulgaria, Croatia, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Macedonia, Montenegro, Poland, Romania, Serbia, Slovakia, Slovenia and Ukraine.
[2] http://www.psik.org.pl/new/slowniczek.php 15 February 2012.
[3] T.P. Agnew, Financing bright ideas. A primer on venture capital in Maine, Finance Authority of Maine, April 2003, p. 3.
[4] A.Metrick, Venture Capital and the Finance of Innovation, John Wiley & Sons, New York 2007, p. 3.

financing, namely bank loan, burdens the company and usually requires collateral. The crucial difference between these two methods is in the way of paying the price for raising capital. Businessmen pay it in the form of a share of ownership in the company in case of venture capital or through payments of interest in case of bank loan. Moreover, venture capital investors are willing to make investments in businesses which are too risky for banks. It concerns a lot of young companies which has no money for development. The comparison of venture capital and bank loan is presented in table 1.

It is worth underlining the importance of the last compared characteristic. Venture capital investors have motivation to support the development of business as they can loose capital as well as the owners of the business. The investors' objectives are congruent with owners and management aims. They both want to increase the value of a company within a few years. This is because venture capital investors only make money when the business makes money. That is why investors take part in the creation of company strategy. Taking venture capital investors on board means gaining a new collaborator and partner who has a rich experience, business contacts and long-term intentions for the success of the business. It builds credibility in market and makes the company more innovative. For the entrepreneurs it is also valuable source of broad contacts in the specific business branch and among financial institutions, consulting and law firms. Venture capital also gives access to advanced new technologies, especially from IT sector. Investors monitor the financial condition of a company and are able to help and resolve problems at the right moment. They are with the company in both good and difficult times. There is no need to announce strategic information to the public. Investors are discreet with the company. They are flexible and can finance further investments if necessary. Venture capital investors help to recruit experienced managers and enable to develop careers of many entrepreneurs. They build a positive image of the company which enables it to become leader in the branch. The combination of money, expertise and long-term engagement in the activity of a company makes venture capital attractive for business development.

Tabela 1. The difference between venture capital and bank loan

Venture capital	Bank loan
Participation in ownership	Maintenance of full independence
Long-term capital	Short, medium or long-term capital
Acceptance of high risk without collateral	Acceptance only of low risk
Positive influence on balance sheet, no need to give the capital back, no interests to pay, improves equity and credit rating	Negative influence on balance sheet, it burdens the company
Supports innovative businesses	Innovative businesses are uncertain and risky
Availability of expertise in the field of finance, marketing and management	Expertise not available, bank not involved in the business
Friendly for cash flow - dividends adjusted to financial condition of a company	Requires stable cash flow to finance interest and capital back
In case of bankruptcy venture capital investor is in the same situation as owners and can loose capital	In case of bankruptcy bank has the right to company assets first

Source: Based on Venture capital - szansą dla przedsiębiorczych, Ministerstwo Gospodarki i Pracy, Departament Przedsiębiorczości,

Seeking for an investor and venture capital investment process

Venture capital investment differs from normal project financing. This is a long process of preparation, negotiation and finalization. It consists of the following steps looking from the point of view of entrepreneur: [5]

- identification of business strengths
- selecting venture capital firm
- writing business plan
- due diligence
- negotiations
- signing an agreement
- post-investment activities
- exit

The first step to approaching venture capital is to define the company's potential, market environment and investment needs. It is worth focusing on the unique idea of business, analyze competitive opportunities and the possibility of investment success. Having identified the strengths, it is time to look for a venture capital fund. [6] Private equity funds only invest in businesses which correspond exactly to their investment criteria. A refusal to invest does not always mean that

[5] T.Tyebjee and A.Bruno in 1984 gave a model of venture capital investment activity taking into account the point of view of a fund. This model is commonly used presently. It consists of 5 stages: deal origination, screening, evaluation, structuring and post-investment activities. Source: T.Tyebjee, A.Bruno, A Model of Venture Capitalist Investment Activity, "Management Science" September 1984, vol. 30 no. 9.

[6] The basic search engine for private equity funds in Poland can be found at http://www.psik.org.pl/new/znajdz_fundusz2.php.

business idea lacks quality, but that the characteristics of the project do not match the set preferences of venture capital firm. It is recommended to analyze the venture capital market and choose the fund, which specializes in certain branch, region and stage of company development.

The next step is to write business plan. This stage is crucial for further negotiations with any venture capital firm.[7] The essential points to cover should contain:[8] executive summary, company history, management team, list of products and services, analysis of market and competition, commercialization, operational management, financial projections, capital required and exit possibilities. It is also advisable to have a shortened version of the business plan which serves as the first point of contact with investors.

After sending the business plan, the venture capital investor will start to analyze the business. Once the project has been provisionally accepted, it is time to evaluate an investment proposal deeply and complete all necessary due diligence. Investors take into account competition, innovation of products or services and possibilities to copy them. The final decision is taken in terms of the expected risk-return trade-off.

When the venture capital firm is satisfied with possibilities of investment, it starts to negotiate the terms of the deal, that is, the amount, the form and the price. After completion of negotiations and due diligence, the decisions are approved by a fund special body - the Investment Committee. The parties sign an agreement based on that decision, and the funding reaches the company. The implementation of the agreed development plan begins and an assistance of venture capital investor in key fields is performed. It is also the possibility to gain second, third or subsequent round of financing.

After several years, usually 3-7, venture capital fund exits the company. There are four ways for a venture capitalist to exit its investment: initial public offering (IPO), acquisition by another company, repurchase of shares by an investee company or its management, or sale of shares to a third party.

The investment process presented above, from the moment of reaching the fund to the moment of funding, usually takes 6-9 months. The exit takes about 3-12 months. It is common to have advisors involved in the deal, especially accountants, tax and legal advisors, bankers. They can help both at the stage of looking for investor and exit.

Venture capital in Poland versus CEE

The private equity market started to develop in 1990 both in Poland and in CEE. Venture capital investments in CEE are not as high as in the rest of Europe. This region attracted only 2% of total European venture investments by amount and number of companies.[9] It is not surprising taking into account the stage of development of these countries. However, it is worth analyzing more deeply the volume and structure of venture investments in Poland and in CEE to evaluate what the business with support of the funding looks like. Table 2 presents amount and number of companies of venture capital investments by stage in Poland, in selected CEE countries and in CEE in total.

With over 2.5 million Euros venture capital investments Poland accounted for almost 4% of venture investment value in the CEE region. Venture transactions in Poland accounted for 0.4% of total volume of private equity investments. The highest amount was invested in buyouts. The list was topped by the Czech Republic with 35% of venture investment value followed by Hungary with 27% of the total. The almost equal investments were allocated in start-up and later-stage venture companies both in Poland and in the CEE region. Later-stage venture investments accounted for 50% of total investments in Poland and 53% in CEE. There was no seed financing in Poland in 2010. The most risky transactions were avoided. This is the incentive to develop business ideas.

Taking into account the number of companies, both Poland and the whole CEE region were start-up orientated. The number of seed companies in CEE is surprising, especially that the total number of early stage companies accounted for almost 80% of venture backed companies. In Poland 6 start-up companies received venture investments and 3 out of

Table 2 Venture capital investments by stage in Poland and in selected CEE countries in 2010

Stage	Poland		Czech Republic		Hungary		Romania		CEE	
	number of companies	amount in thousand euros	number of companies	amount in thousand euros	number of companies	amount in thousand euros	number of companies	amount in thousand euros	number of companies	amount i n thousand euros
seed	0	0	0	0	1	853	0	0	12	3 000
start-up	6	1 293	2	13 138	7	5 761	1	1 904	33	28 000
later-stage venture	3	1 272	1	9 910	3	11 286	2	10 050	13	35 000
Total	**9**	**2 565**	**3**	**23 048**	**11**	**17 900**	**3**	**11 954**	**58**	**66 000**
Percentage of total in CEE	16	4	5	35	19	27	5	18	100	100

Source: Based on Central and Eastern Europe Statistics 2010, An EVCA Special Paper July 2011 and EVCA Yearbook 2011.

[7] This stage is critical and very selective. Out of 100 submitted business plans, over half is rejected after the first reading, the next 25 after more detailed scrutiny, and another 10 business plans after deeper analysis. From the initial 100, only several companies manage to reach the more advanced stages of analysis.
[8] Guide on Private Equity and Venture Capital for Entrepreneurs, An EVCA Special Paper, November 2007, p... 17-20.
[9] Central and Eastern…, op.cit., p. 24.

13 in the CEE region later-stage venture. The average amount invested in start up companies in Poland was about 0.2 million Euro (in CEE 0.8 million Euro), while in later-stage venture 0.4 million Euro (in CEE 2.7 million Euro), so high amounts of money are attracted by less risky transactions. What remains clear is that venture capital fund managers mostly operate on a regional basis and are ready to complete transactions, especially in attractive countries. In terms of the number of companies, the list was topped by Estonia with 12 companies, followed by Hungary and Slovakia with 11 companies each. The conclusion is that by number of companies, the CEE region is early stage orientated. However higher investments appears in later-stage venture. The amount invested in Poland was below the average in the region and there was no big difference in average volume.

One of the most important characteristics of the venture capital market is the branch attractiveness of companies. Venture capital tends to favor certain sectors over others. The level of investments in a particular branch is not the same every year, nevertheless it is worth checking whether the preferences were comparable in Poland and in CEE.

The data presented in table 3 shows that in CEE the highest amount was invested in financial services with 17 million Euros invested across 3 companies, communications with 15.6 million Euros across 14 companies and energy and environment with 13,2 million Euros across 3 companies. In Poland the most favorite were communications, life sciences and consumer services. Taking into account the number of companies the most common was the communication sector both in Poland and in CEE. Life sciences was also one of the largest venture investment field in this region. It is interesting to note that the structure of venture capital by sector does not show a clear concentration on any selected branch.

The final shape of a transaction is decided by an exit of the investor (divestment). It can be interpreted as completing the task, which means realizing support of the business. The success of the venture capital

Table 3 Poland and CEE venture capital investments by sector in 2010

Sector	Poland		CEE	
	number of companies	amount in thousands euro	number of companies	amount in thousands euro
Business & industrial products	0	0	1	200
Business & industrial services	0	0	5	1 300
Communications	4	927	14	15 600
Computer & consumer electronics	1	74	13	7 000
Construction	0	0	2	300
Consumer goods & retail	0	0	1	200
Consumer services	1	702	3	1 000
Energy & environment	0	0	3	13 200
Financial services	1	93	3	17 000
Life sciences	2	769	9	5 600
Real estate	0	0	1	3 200
Transportation	0	0	3	800
Total	9	2 565	58	65 400

Source: Based on EVCA data

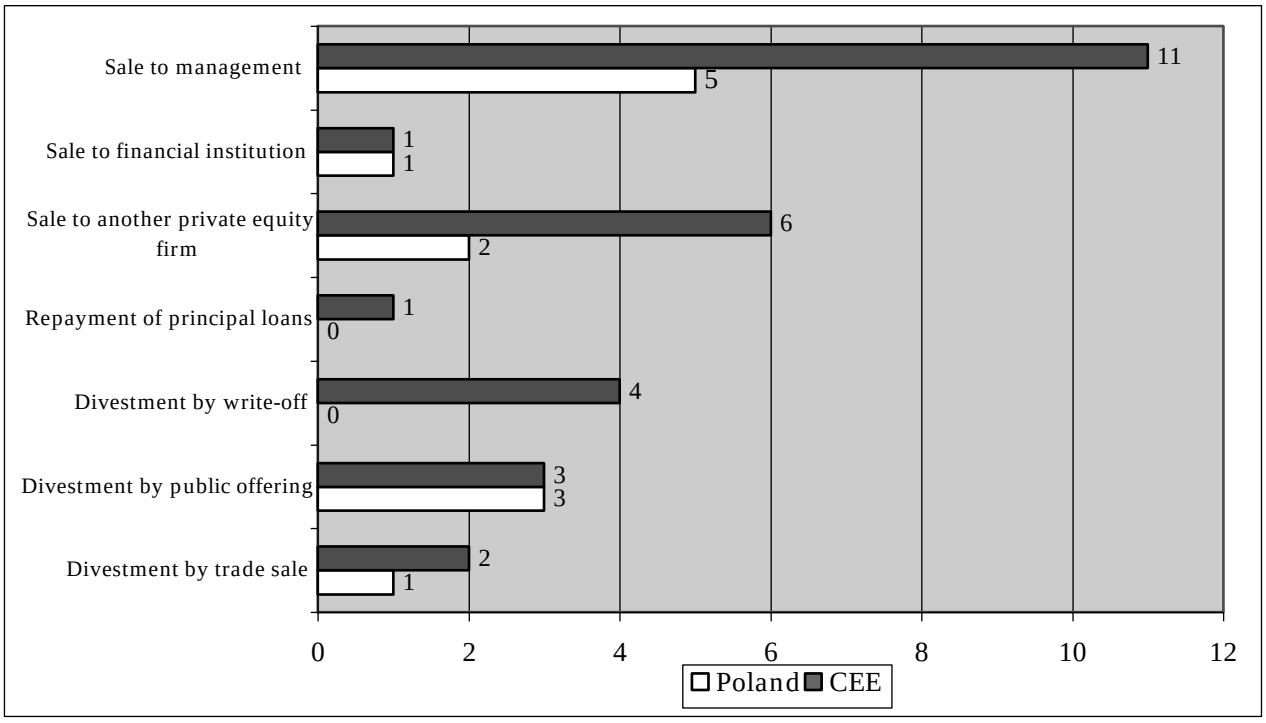
industry depends on the exit process. 43% of total CEE divestments were made in Poland. That means that Polish market is very attractive for venture capital investors in the CEE region. The data presented on figure 1 shows that sale to management and to another private equity firms were the most common divestments both in Poland and in the CEE region. Divestment by public offering, in this case sale of quoted equity, was made only on Polish market. Generally, sale of equity is more common than other forms of exit. The most visible and glamorous way of exit is initial public offering (IPO), however it is not the most popular. There was no IPO exit in the CEE region. The most significant benefit of a trade sale exit is that it is immediate and complete exit.

Investments are correlated with divestments, so that proves Poland is one of the most important venture capital players in the CEE region.

The characteristics of business with venture capital in Poland

Venture capital is a key source for entrepreneurial growth in the CEE region. Financial support for young, small and innovative companies is important for CEE countries trying to reduce the development gap to western European economies. The sources of funds come mostly from non-domestic markets. In Poland only 6.7% of funds come from the domestic market, the rest within Europe [10]. It can be stated that capital supply depends on foreign sources and the economic situation in other countries. This is a typical characteristic for CEE. These funds usually have large assets and are interested in big projects. This can be the explanation of low investments in seed stage. It can be observed as a big demand of financing of small projects in Poland. Such funds that are

Figure 1. Venture capital divestments in Poland and CEE in 2010 (number of companies)



Source: Based on EVCA data.

providing smaller amounts of capital are considered as those which influence the most entrepreneurship and business development. It can be generally said that the Polish venture capital market is poorly developed, however in the CEE region ranks among leading countries. According to the Ernst &Young and University of Navarra report, Poland is the best CEE country for private equity investments [11]. An important characteristic in the development of the venture capital market is the overall culture of entrepreneurship, which includes innovativeness, expenditures on research and development and general bureaucratic conditions related to doing business. This is connected with regulatory issues related to the ease of establishing, conducting and closing business. The ratio of total private equity investment value to GDP in Poland was 0.192% compared to 0.119% in CEE in 2010 [12]. That was one of the highest rates in the region topped by Bulgaria with 0.228%. The ratio for the CEE region was still far below the European one (0.314%). Poland does not exploit fully its potential on venture capital market. The development is supported by PPEA, which was founded in 2001 and comprises of 41 full members and 43 associate members[13]. The venture capital market is also supported by the European Union by launching such programmes as the Competitiveness and Innovation of Framework Programme 2007-2013: CIP. One of the subprogrammes concerns support for financing innovation-orientated early stages companies. Activity of small and medium enterprises is a crucial point of European Union directions of development. Such programmes create

[10] EVCA Yearbook 2011.

opportunities for acquiring additional capital by venture capital funds in Poland and in CEE. There is much space for expanding venture capital market. Poland has significant untapped potential awaiting for investors and new business ideas. Venture capital market will develop and be more and more ambitious for businessmen and investors. This is new and immature section of the financial market in CEE. Poland is an attractive market and it results from the positive macroeconomic data and a stable situation on the banking market.

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[11] Poland took 36th place among 80 countries around the world. The country's attractiveness index, on the basis of which the ranking was created, comprises such factors as the country's economic activity, the depth of the capital market, tax conditions, investor protection and standards of corporate governance, quality of human capital, culture and the level to which entrepreneurship is developed. A.Groh, H.Liechtenstein, K.Lieser, The Global Venture Capital and Private Equity Country Attractiveness Index, 2011 annual.

[12] Central and Eastern…, op.cit., P... 15.

[13] http://www.ppea.org.pl/new/czlonkowie.php 27 February 2012.

Return to the primary energy

The energy security touches everyone: consumers, energy producers, investors as well as politicians. It is very much the long-lasting trends identification, evolution of the power systems, development of the technologies associated with acquiring the energy and creating its alternatives that the lifestyles of societies depend on. The world energy sector faces challenges to provide billions of people with the permanent energy supplies, in a sustainable way, at acceptable prices. The global power system is experiencing the structural crisis. One of its reasons is the need to limit the climate changes together with the simultaneous energy security being ensured in times of the fast increasing demand for energy. More and more difficult access to sources of fossil fuels, above all petroleum and gas, is of great importance, too.

The increasing difference between the bigger demand for energy and the limited reserves of such fuels as oil and gas made the fuel prices rise to the highest levels possible. In consequence, the cold winds of recession were triggered. These problems make a considerable risk for the international political and economic balance.

These days ensuring the energy security has become a crucial factor in shaping the countries' policy. Even though superficially understood, energy security factors are not usually fully analised. It's often forgotten that although once given, the energy security is not to last forever. The process, being shaped by a number of factors characterized by a continuing volatility, is dynamic and the efforts to ensure and maintain it are never ending.

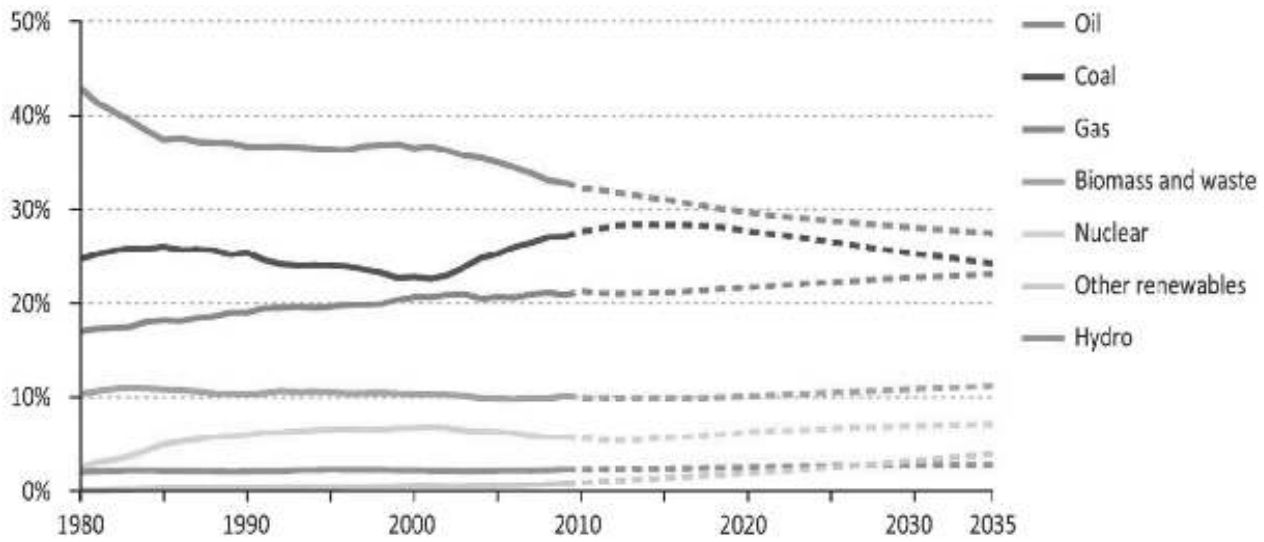
American International Energy Agency in World Energy Outlook publication has assumed that the scale and scope of the challenges for the energy sector, including the commodity one, is huge, but the societies in global must face them. Last years' recession has temporarily slowed down the increasing consumption of fossil fuels in some regions of the world. However, the global energy consumption continues to grow.

The IEA reference scenario taking the distinction between different categories of energy into account, predicts that the demand for primary energy will increase by 1.5% annually until 2030. In total, this represents an increase of 40%, and the main driver of this growth is the extremely fast-growing Asia and the Middle East economies.

What is the primary energy?

Energy is stored in the source of energy. The primary energy source is the one taken directly from the nature. It is, for example, coal, oil, gas, or sunlight. The energy produced from them such as heat or electricity is the secondary energy, and the amount produced per unit of primary energy is dependent on the mining equipment efficiency, power sources, equipment used for its transport and the devices the secondary energy is produced in .

Fossil fuels have for many years remained the dominant source of primary energy, and these represent more than one third of the total growth in energy consumption in the forecasts till 2030. According to BP World Statistics, in 2010, coal consumption increased by 7.6%, thus only the consumption of renewable energy has a greater increase than obtaining energy from coal. The reasons for the increase are in the rapidly developing countries, with less sophisticated energy systems, such as China and India. For several years, these economies have been consuming more energy than developed countries. The energy within the increase comes mainly from coal - the simplest fuel, ready for consumption immediately after extraction, being the driving force for



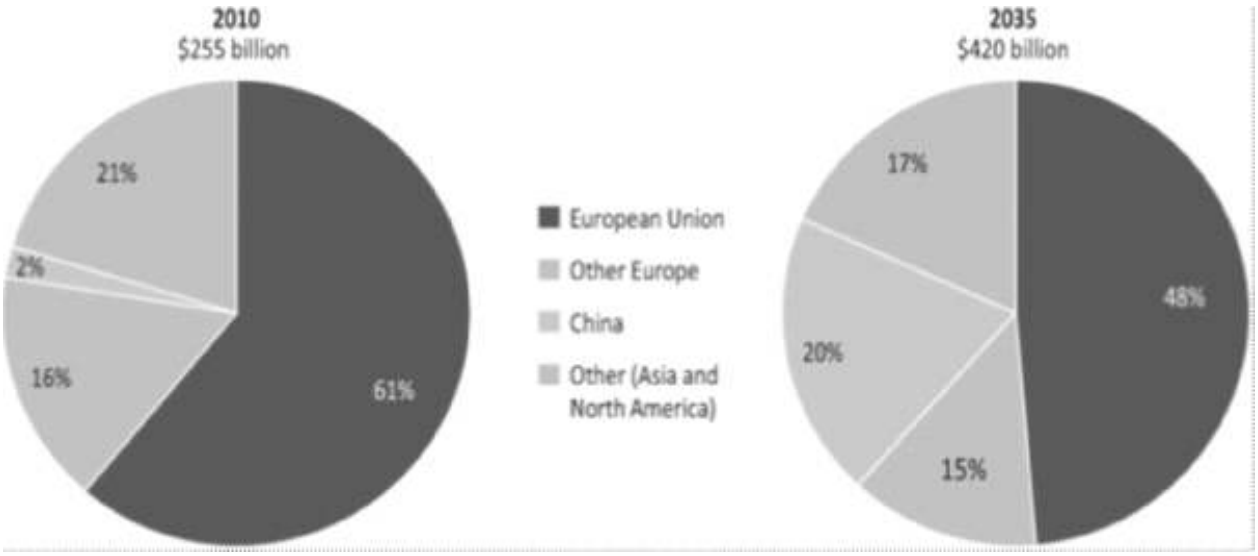
Shares of energy sources in world primary energy demand in the New Policies Scenario. Source: World Energy Outlook 2011 IEA

the poor in this world. Crude oil plays a different role in the energy balance, satisfying other needs it is a more sophisticated form of primary energy than coal.

What energy forecasts tend to show most is the increased coal consumption, followed by natural gas and crude oil. Despite the phenomenal growth of the interest in coal, it is petroleum that remains the dominant fuel in 2030. Its share in the overall energy balance decreases from the present 34% to 30%. Still, in quantitative terms other energy sources do not threaten its market position.

According to the scenario, conventional crude oil production in countries outside OPEC, already peaked in 2010, which would mean that non-OPEC countries already being in the so-called Oil Peak have exceeded their peak production. IEA forecast assumes that most of the remaining production will have to come from the countries belonging to OPEC.

The scenarios made by the institutions and energy experts are only a tool to identify problems related to the forthcoming changes. They allow planning the interactions with emerging opportunities. These are not fortune telling practices, prophecies, or any oracles whatsoever. We realize that in hundred years' time the power system will be very different from the one today, but what we would like to gain is more precise knowledge about our energy future to be able to prepare for the changes. Energy scenarios present the future based on the pace and shape data of changes with reference to demographic, geopolitical, environmental and technological assumptions. They allow us responsible and active participation in shaping the world's energy future.



Sources of Russian revenue from fossil fuel export sales. Source: World Energy Outlook 2011 IEA

Demand of the Old and the New World

Population growth, industrial development, together with the prosperity of countries and citizens are the most important factors to influence the demand for energy. Demographic data indicate that the world population will have reached nearly 8 billion by the year 2030, and will have exceeded 9 billion by 2050. Only about 1.3 billion these are the citizens of the countries currently seen as highly developed ones. It shows clearly that the countries most responsible for the expected increase in demand for energy will be the "New World" fast economy growing countries, such as China, India and Brazil most of all.

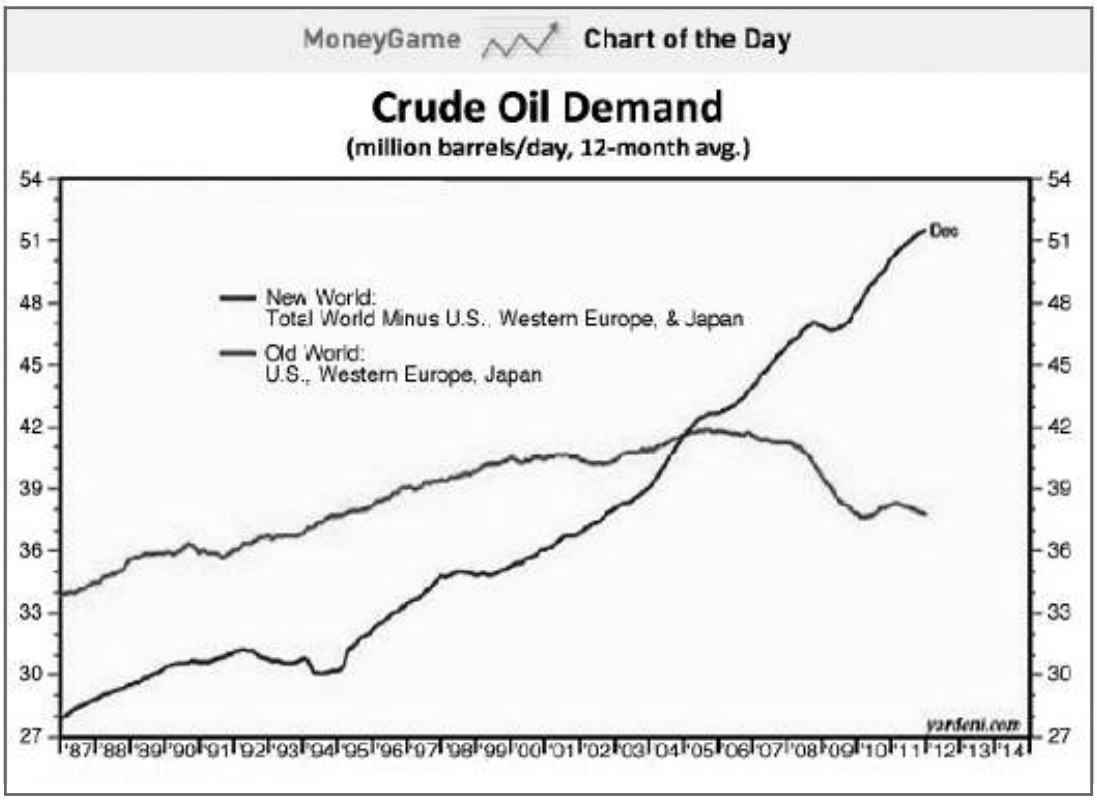
The Old World" - the United States, Europe and a former Asian tiger - Japan has for several years been showing a decreasing interest in oil. In these countries the oil demand fell to 37.7 million bbl / d in January 2012, while the demand from the "New World" reached a new record of 51.4 billion bbl / d.

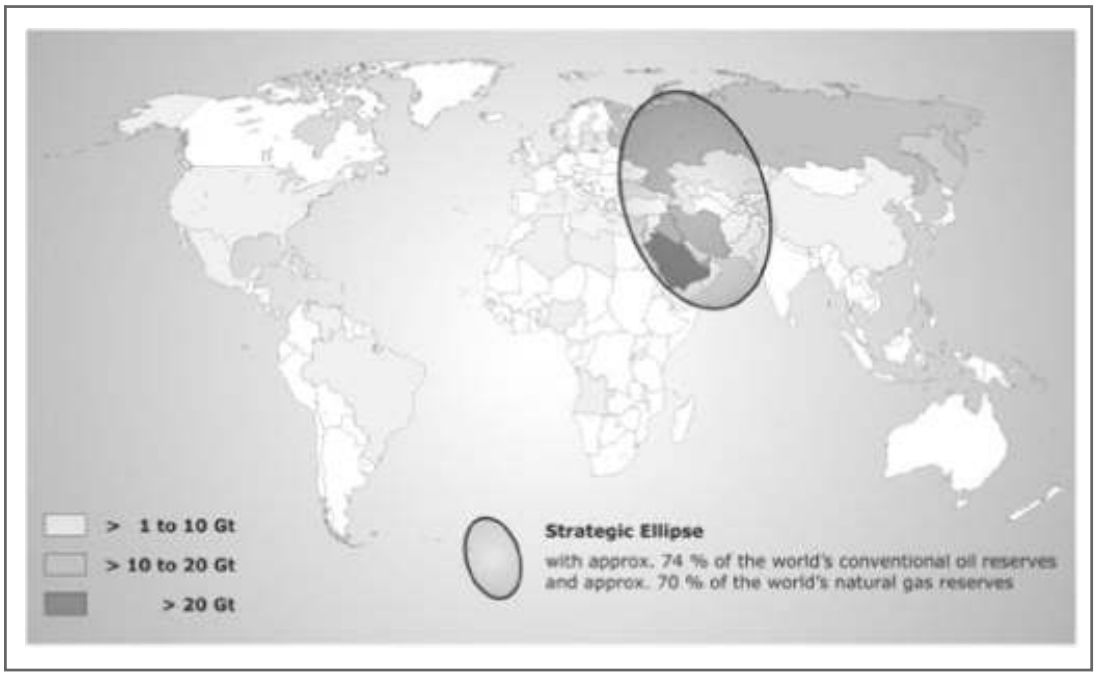
This is where the oil producers' attention has been drawn to exactly to the 'New World' countries which customers provide steady or even growing consumption of both crude oil and petroleum products in the coming years. From the producers' perspective, these are the markets worth investments made in infrastructure, with the safe return on invested funds. Hence Russia's growing interest in developing oil production from the fields located in Eastern Siberia and the arctic regions. Investments in mining in this area are also related to the ones in construction of pipelines and marine terminals, as well as organizing transport routes directed to the Far East markets. Due to the decline in arctic ice, the North East Passage connecting Europe and the Pacific, called the new Suez has been considered more attractive and allows delivering oil from arctic sources directly to customers in China (table page 24)

Despite enormous effort being made and the technological and financial investments in oil production, mining of the known and currently exploited fields is going to decline dramatically. Assuming the development of production from already discovered reserves and the intensive searching and exploration of new conventional oil resources, we have a chance to maintain oil production at the today's level, or slightly increased, if NGL (Natural Gas Liquids) are included. Having added the overall oil production from unconventional deposits such as for example tar sands or shale oil, the increase in the output of today's 88 million bbl / d to the level of 96 million bbl / d can be achieved by 2035.

The deposits of oil that have so far been used are distributed in the area reaching from the Middle East to the northern parts of Russia. The area tends to be called the Strategic Ellipse due to the strategic importance of oil found there. According to ExxonMobil "2012 Outlook for Energy", as much as 75% of oil used today was discovered before 1980. This fact is very important to understand the causes of the supply of oil reduction in global markets.

Production. Strategic Ellipse and Western Hemisphere





Strategic Ellipse. Bundesanstalt für Geowissenschaften und Rohstoffe (BGR) in Hannover. [Federal Institute for Geosciences and Natural Resources].

The interest in the oil sector is focused on the Middle East, regardless of the new discoveries related to the energy sources all around the globe. So far, the majority of the forecasts for developed countries have pointed out their constant increasing dependence on the Middle East, and oil supplies from the region have been seen as a continuing growth to satisfy the demand. The image, stable for decades, was a constant background for the energy policy not only of the U.S. but also Europe and the Far East, which basically means for the entire global economy.

Recently there have occurred certain changes, not only because of Russia's achieving successful results of relatively easily accessible East Siberian deposits extraction and focusing on the further expansion in the Arctic areas. The real hit of recent years has been the shift of the largest sources to the Western Hemisphere of the globe. The largest deposits are viewed from the north in Alberta, Canada, American Dakota and South Texas. The river of oil next flows through French Guiana to the huge deposits off the coast of Brazil.

This huge change in terms of both the global policy and planning of

supply sources is a result of the U.S. approach to energy policy, aiming to gain independence from suppliers, intensive geological exploration and the development of mining technologies. The resource center shift was not the result of the plan as much as the result of the initiatives unrelated.

The changes in the position of the oil resources are referred to as the Western Hemisphere Energy.

All these events tend to reshape the global oil market in a radical way. Developed countries will carry on requiring supplies from the rest of the world, but not to the same extent as they used to. By 2020, the demand for import is about to fall by half.

Oil, no longer needed by the west, will probably go to the Far East - to the rapidly growing Chinese economy. The Middle East and Russia suppliers' great interest in the Far East customers does not seem surprising. These markets will be in an urgent need of additional supplies. China, today consuming less oil than the U.S., is likely to overtake America as the world's largest oil consumer at the dawn of the next decade. It all leads to serious geopolitical changes. More and more often , the responsibility for the Persian Gulf area stability is questioned.

This region will continuously remain of crucial importance for the global oil market. What is going to change is the transport directions and the oil recipients. The Middle East oil will flow in greater quantities than ever before to the Far East, in the U.S. from south to north there will be shipments of vessels from the deposits of Brazil and from the northern Canada by the pipeline to the southern part of the country.

An additional innovation for the global oil market will be newly built and modernized American pipelines to enable the oil transfer from the center of the country to the east coast ports. This will make the export of U.S. and Canadian oil by tankers up to remote customers possible, provided the rules prohibiting the export of the U.S. extracted oil are going to be changed.

In the coming years, the production of easily accessible and cheaper oil will not meet our needs. It can easily be repeated that the era of cheap oil, and thus the inexpensive cost of transport fuel has definitely come to an end. In order to secure the cheap transport we need to think about another power source.

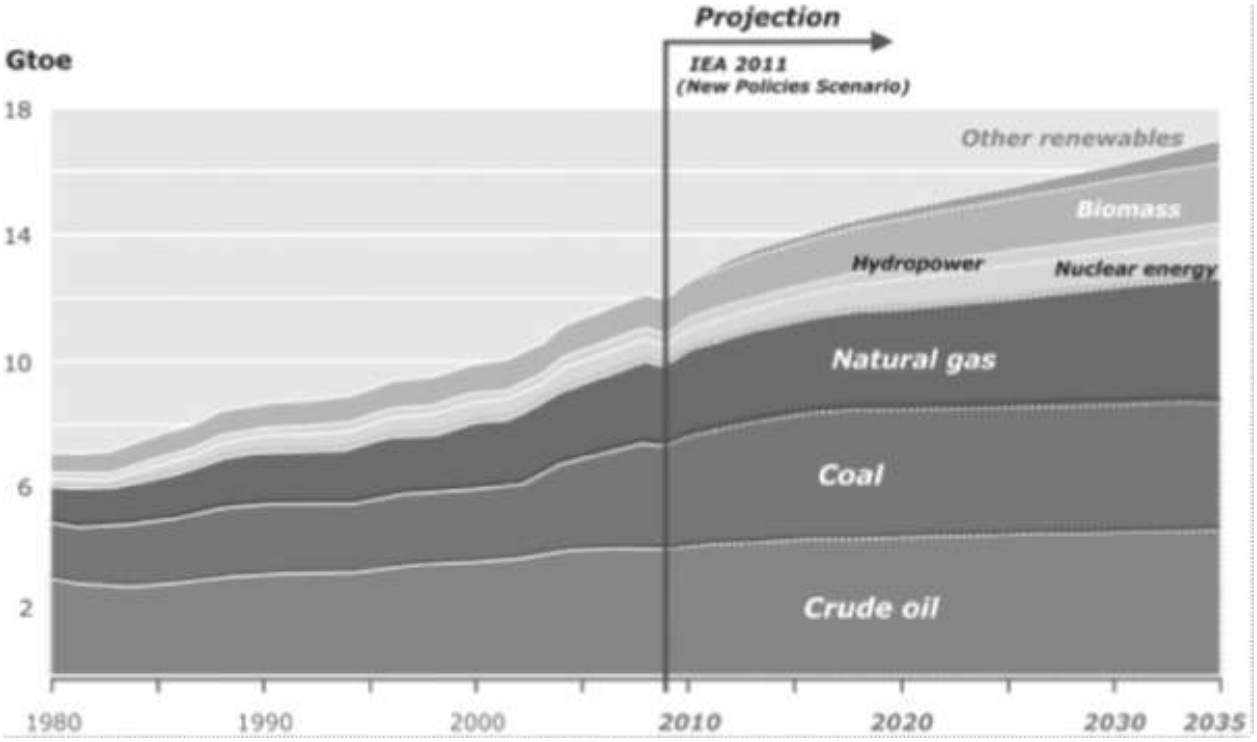
The questions concerning further development of technologies that allow us to derive energy from Arctic oil and gas, as well as finding new sources yet inscrutable such as methane hydrates, remain open. No one really knows how large and stable the deposits of methane hydrates are. However, for the last couple of years more and more scientists have been discussing the problem, speculating how the rapid warming of the Arctic will affect the deposits' destabilization. In the Arctic, due to low water temperatures, the deposits lie in the sediments. The warming of the climate and the disappearance of sea ice leads to a rapid rise in temperature of the water surrounding methane hydrates, which causes their destabilization. The use of new energy sources is going to be the biggest technological and ecological challenge ever. We can now hardly imagine the scope, just with a science fiction perspective.

European measures to reduce CO2 emissions, and thus decrease oil consumption, perfectly fit the situation on the market of oil producers, who can direct their production to the rapidly developing economies. At the same time the decrease in demand in OECD countries, has a slightly damping influence on the continuous oil prices rise all around the world markets.

Questions about the future

Model of the twenty-first century world is closely linked to the ongoing economic growth, that constantly needs to be a driving force. Technological progress is aimed at continuously increasing natural resources production, including the energy one, because, among other things, it does contribute to the economic growth.

The development of technology, also used by the mining of crude oil, makes us have the misconception of oil resources being limited due only to the level of mining technology development. We forget that while making use of the technology we do not create new resources. What we



Development of global primary energy consumption versus fuels, and a possible future development scenario ("Scenario based on the new energy policy conditions" - New Policies Scenario, IEA 2011a).

do is taking advantage of obtaining the resources previously unavailable to us. This conception leads to an illusory belief in technology and its unlimited almighty power in ensuring our energy security.

One of the key questions the twenty-first century economy should be asked is the problem of the future of energy - What is going to happen when the economy key resources become unavailable? How can the growth of technology meet our needs of the economic growth?

The energy industry related disasters, we have recently been hit by, are the result of the acquisition of primary energy spilling from the Deepwater Horizon platform in the Gulf of Mexico, and of the production of secondary energy in Fukushima, Japan. The two events separated by a few months, have provided the world economy with a serious risk assessment lesson to learn. Both cases make us realize that the world's energy systems, regardless of their geographic location or a political situation , have come to an advanced stage of complexity.

Societies, especially the west ones, have long been enjoying the benefits of advanced technology without any major disruption. The catastrophe with the spill from the BP platform took place over a hundred years after the beginning of mass oil production. Still, one hundred years' time is roughly like the period of the history of oil production in total. Summing up, it was the first listed and the most result unpredictable event on record. The current knowledge of the oil production was, in a sense, the support for the spill stop operation . The knowledge allows the extraction of the oil from deposits located a few kilometers below the ocean surface with the means of the deep-sea drilling method. It is crucial because most of the newly discovered hydrocarbon fields are located beneath the oceans. Stopping the oil spill from the Deepwater Horizon, together with clearing off the spill effects claimed huge costs. BP fails to bear its total costs. Government funds, devices and the personnel equipment addressed to the Gulf Coast were very much like the ones of military operations.

Deepwater Horizon disaster has proven that the modern methods of energy production often reach far beyond the operators' intervention capabilities. The gap between the production technologies and the technical possibilities of spills response is huge, resulting in a lack of any physical ability to stop the leak. This is very much so due to the lack of suitable specialist equipment to move people and materials for such a great depth in order to remove the disaster's causes. Fortunately, thanks to the BP employees' skills, the oil flow from the well could be stopped. A nuclear disaster in Japan, caused by the undersea earthquake, revealed the weakness of Japan, as the country without a sustainable fossil fuels supply to be able to meet the energy appetite of the country's manufacturing base. The disaster in Fukushima showed an incredible gap in Japan's energy security. However, there has so far been no mention that it is not just the tsunami that devastated installation systems, but a lack of auxiliary power supply to provide the reactor's cooling function, which was of the greatest neglect. It's worth bearing in mind this was the true source of the Japanese crisis as it led to an uncontrollable nuclear reaction. The world has realized how big Japan's dependence on nuclear power was, the one which fulfilled 30% of the energy needs of the country's electricity. No wonder the country in order to make up for the lack of energy caused by the tsunami has substantially increased imports of LNG and coal. Japan is one of the largest importers of LNG, and still has to import 80% of its energy mix, including both crude oil and very large amounts of coal, because it is the fourth largest consumer of coal in the world, following China, the USA and India.

As a result of oil spills in the Gulf of Mexico, triggering a moratorium on offshore drilling in the U.S., there is also a new set of rules and restrictions emerging, associated with the marine environment drilling. Most of these restrictions have one purpose - to prevent such leaks in the deep sea, or to have the effective ability to remove them. Events seem to suggest that deep-sea drilling in the Gulf reached a quantitative peak. But, what we already know is that the number of platforms in the Gulf of Mexico slowly returns to its state before the spill took place. This demonstrates the great need of oil in the U.S. market and the desire to maintain as great independence as possible from the imports.

A global response to the Japanese disaster has seriously affected the number of economies, especially the ones that mainly rely on nuclear power. Germany has announced that the country was to accelerate the transition process to renewable energy sources, which will make them less dependent on nuclear energy. Other countries have tightened their control procedures related to nuclear power plants safety. A fundamental feature of the education typical for the Western culture is a narrative of progress. Examples of technological advances available in Western culture, which in reality moved us from the era of wood to the coal age, and finally into the age of oil, are the proof that mankind is always likely to find a solution to the problems occurring. In particular, a certain way for the development will be found.

Fukuyama is not right to speak about the end of history, just like the ones who herald the end of the energy with the vision of the fallen civilizations after the oil or gas resources have been exploited.

It is worth to mention the certain kind of symbiosis between the machines invented in order to extract raw materials, such as the steam engine used in coal mines and the life cycle of the machines, which utilize the resources extracted with their help. Coal mining has led to the development of machines that work thanks to coal, just like oil fuels the machinery used to produce it. It's an incredibly evocative example of determining the cycle of existence.

It is hard to blame enterprising, enlightened people holding an advanced position in business, creating new technologies for the faith that the technologies created will ensure the civilization development together with the energy security. Despite the strong belief in the raw materials availability, the events such as the Deepwater Horizon and Fukushima deserve a deeper insight as they tend to have a special place in the ongoing narrative of progress.

Current oil production is performed with the means of highly complex methods, as well as more and more complex technology: deep sea drilling, fracturing of rocks and other niche ways of obtaining energy. It makes all these processes resemble the nuclear energy and petrochemical technology advancement, rather than the methods of open cast mines. The technology and systems used in oil mining processes are not only technically and technologically advanced; they are also closely linked. This means that any failures in the world are easily spreadable to other parts of the energy production process taking place in different corners of the globe with system disasters of a bigger scope caused.

What it also means is that the extent of the failures' effects is likely to be more extensive than used to be imagined having followed mining and transportation of crude oil disasters. A limited, still large, though, oil spill from the damaged tanker could serve a perfect example. It can be specified that, according to the bad luck scenario, all the oil transported by the ship is leaking out , with its amount known; thus, which can enable to estimate the size of the disaster, and so the effective measures for the results caused are to be taken. Nuclear disaster effects resulting from clouds of pollution, spread over large geographical areas, have been experienced, too. Deepwater Horizon accident has given a warning that today's oil production has exceeded the threshold of the conceivable coverage limits. Most importantly, no one was able to determine the intensity of the leak or its duration, and thus the size of the disaster effects was unknown. Despite the current euphoria on the extraction of shale gas and oil production not only from oil sands in Alberta, Canada, but also in Europe, the access to uncontaminated groundwater has already been forecast as more difficult than expected.

According to the way we were taught, we are accustomed to the idea of natural resources being used not for the continuous economic growth, but to maintain current living standards with more and more advanced

technologies saving the resources 'for the generations to come'.

How is the unstoppable expansion of developing economies going to finish? It is hard to say. A frustrating limitation nearly everyone, regardless of the political and economic beliefs, understands. The world's reactions following the disaster in Japan, and Fukushima impact on future energy policies may probably be a bit too quick, though ideologically correct in terms of the concern for the future.

We do feel a little confused placed between the rising demands of nuclear energy opponents, nuclear industry defense reactions and carefully worked out statements of politicians and decision makers.

Fukushima is unlikely to change much in political economy of nuclear power. The rich and developed economies have a relatively flat increase in energy consumption or, like it happens in the U.S. and Western Europe, they even tend to show an energy consumption decrease. The countries with rich energy infrastructure have not built too many projects related to nuclear energy in recent years, and are not likely to do so very soon. The renaissance of nuclear power, as is imagined today, is possible in developing countries, where, together with the rapid growth of economies, an energy generation capacity demand is growing. China or India, with nuclear power stations already built or being designed, are a good example.

The renaissance of nuclear power in the West, so long predicted, has never occurred. It is not true that with the diminishing current growth forecasts, nuclear power, as the main way to meet the energy needs, is going to be selected by the developing countries. Coal still remains the dominant source of energy in these countries. The reasons are obvious: it is a 'simple material', easy to transport and storage. It is cheap, which is of crucial importance. And the most importantly, it is not a complex source of energy. Anyone with no use of complex technologies knows how to 'burn in the fireplace'.

Using coal as an energy resource is rather unsophisticated, causing long-term harmful effects and, as a result, brings in high degradation of the environment. Societies are, however, much more concerned about the unexpected, unpredictable accidents to happen now or in a while than about the ones which are capable of bringing a lot more damage to health and the environment with the degradation process stretched in time. This has little to do with logic, but that's what are our preferences are like.

Similar are the social reactions towards complex technologies people view as the research laboratories ones, and, in principle, regard as incomprehensible to the public. There is also no public acceptance for the capital intensive investments in long-term research, the effect of which the society can find hard to adopt to, even though it's about to provide them with basic needs. If the investment in the complex mining methods carries any risk, or is to disturb the prosperity society's peace - why take it?

It took more than ten years to study the impact of bio-energy development on food production. It may take ten years more to make the research on reversal of the trend of food prices' increase. What seems important is the ways to stimulate the crops development so that the food becomes more available to poor communities, without any energy loss of wealthy societies. It may also turn out that the cost of repairing the damage, caused by new sources of energy, gets too high for most societies. At this point of the consideration it is clearly seen that the technology is not going to solve all problems for us, even if this is what is expected.

It is obvious that nowadays we lack the knowledge and concepts concerning the economic growth limits and the environmental implications related. The reports of experts and think tanks are nothing more than a prediction with no responsibility taken for its effect. Having had certain experience in this regard, there seems to be an alternative route - the resignation from the complex energy systems in order to regain the peaceful path of the life in simplicity, which as I suppose would not receive any public acclaim. Is it the only thing left for us - to maintain a status quo approach to market forces until we get pressed seriously enough to be convinced of the rightness of the energy changes concept?

Szymichowski

Market Processes and Phenomena in Urban Transport

Abstract

The responsibility of local and regional authorities for meeting the mobility needs of the inhabitants requires a permanent observation and study of the phenomena and the processes taking place in the urban transport market. Such analysis is necessary for the proper functioning of the market, smoothly balancing the demand and the supply. This has to be achieved while municipalities decide the prices and fund the deficit resulting from the fact that proceeds from the sales of urban transport services do not pay all the cost of sales. The distortion of the market mechanism in urban transport market puts constraints on its functioning. In seeking high productivity of the urban transport business, one has to create conditions in which there is competition in the supply of the transport services.

Key words: urban transport, demand, mobility needs, supply, prices, market regulation, urban transport services

Introduction

The needs appearing in the urban transport market are of primary importance from the point of view of how the other processes and phenomena in the market are shaped as well as from the market pattern perspective in terms of both the products/services that are offered and their suppliers. The occurrence of mobility needs is a consequence of the previous emergence of primary needs and is the original source of demand for urban transport services. The needs in the urban transport market are not constant by nature and in consecutive time intervals may vary as to their intensity, thus affecting the capacity of the market and its absorptive power. Social, economic, technological and legal changes are not insignificant either, as they result in the differentiation of mobility needs which urban transport has to address. Mobility needs are particularly susceptible to differentiation when there are no economic constraints as to the urgency of satisfying them, which means they are regarded as higher-order needs. Furthermore, the phenomena like market globalisation, the growing regulating role of municipalities, the greater significance of social aspects accompanied by the growth in the affluence of the society (as demonstrated by the increasing car ownership and use) make any forecasting of the demand for transport services really complex. The responsibility of local and regional authorities for meeting the mobility needs of the inhabitants requires a permanent observation and study of the phenomena and the processes taking place in the urban transport market. Such analysis is necessary for the proper functioning of the market, smoothly balancing the demand and the supply. What makes the urban transport market different from other transport markets is the fact, that prices are pre-decided by the municipalities, who have to fund the shortfall resulting from the fact that proceeds from the sales of urban transport services are lower than the cost of sales.

Demand for urban transport services

In the process of shaping the demand for urban transport services, like in the other transport markets, mobility needs arise resulting in the request for transport services (Fig. 1). The corresponding economic category is potential demand that changes into effective demand if the potential buyers are actually able to fund the purchase of the transport services, which they buy from urban transport providers employing commercial transport operators. It should be stressed, however, that mobility needs may also be satisfied by those who articulate them on their own. This is the case with individual mobility needs independently satisfied by car users. The realisation of mobility needs in the urban transport market results in trips made by passengers within organically connected urban areas.

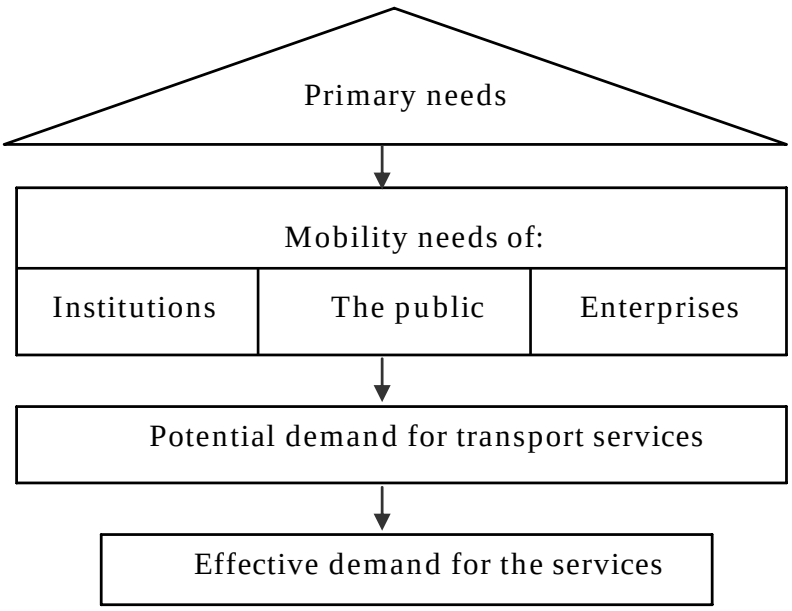


Figure 1. The formation process of effective demand for urban transport services
Source: Polski rynek usług transportowych. Funkcjonowanie, przemiany, rozwój, ed. D.Rucińska, PWE, Warsaw 2012, p..48.

Mobility needs result from business activities as well as the social organisation and occur[1]:

- within the production-and-service system;
- within the settlement system;
- from the production-and-service to the settlement system;
- from the settlement to the production-and-service system.

The needs within the production-and-service system are mainly connected with the carriage of freight between entities engaged in manufacturing processes. The carriage of people is marginal, connected with the employees engaged in the manufacturing and service processes.

The reverse is the case within the settlement system. Mobility needs of people prevail here, connected with their daily lives and the needs they want satisfied cultural, social, recreational, etc. Freight movement is of minor importance and concerns mobility needs resulting from shopping or people moving to new residence.

Between the production-and-service and the settlement systems, there is a need for the movement of goods, final products and workforce.

The sources of mobility needs are affected by many variables. In the case of the movement of people, the parameters normally considered are the population its size and demography, car ownership, etc. For the movement of freight, the features of production, retail and service enterprises are of major importance, as they will define the volume and the frequency of deliveries.

Mobility needs and their characteristics may be identified by mobility expectations. Their list may be long and diversified, depending on whether it is the movement of people or freight that is concerned. Nevertheless, basic and universal mobility expectations include[2]:

- time in which they are satisfied;
- physical and time accessibility;
- direct connection;
- reliability;
- frequency;
- punctuality;
- even intervals;
- safety of the freight/comfort of the passenger;
- security;
- certainty of timely arrival;
- comprehensive service.

In urban transport, the most essential and frequently mentioned mobility expectations include[3]:

- trip duration;
- comfort of travelling;
- cost of the trip;
- safety and security of travelling.

A scrutiny of the needs arising in the transport market is very important for the market regulator and the urban transport provider acting on the regulator's behalf. Owing to it, they can make a forecast of both potential and effective demand for urban transport services and match their offer to customer expectations, both in terms of quality and quantity, with due regard to physical and time accessibility. Information on mobility needs is also the basis of public authority intervention in the transport market, taking the form of transport policy goals and means determination, most frequently coupled with the objectives of economic, social and environmental policies.

A research into mobility needs and demand in the urban transport market requires the use of methods adequate for the specific nature of this market. The basic scope of research should embrace:

- demand size and pattern (inter alia, traffic counts);
- traffic generation pattern (inter alia, traffic surveys of vehicles entering/exiting a region, questionnaires);
- mobility preferences and behaviour (inter alia, market interviews, questionnaires).

The demand for urban transport services comes from households composed of the inhabitants of strongly urbanised areas making cities and conurbations, together with the suburban areas organically connected with them. The demand for services also comes from individuals that are not residents of the given urbanised area.

Within households, the sources of demand are household members as individual consumers. Among them are all the residents, who represent potential consumers, and residents actually using the urban transport services the passengers.

Demand formation in the urban transport market, its scale, changes and their pace depend on many factors. The most important variables affecting the demand for passenger transport in strongly urbanised areas are[4]:

- number of inhabitants;
- settlement pattern and the degree of concentration;
- the purchasing power of the people;
- the amount of time given to various activities;
- the cost of operating private transport means versus public transport fares;
- the significance of particular mobility expectations composing the quality of the services offered.

Supply in urban transport market

The existence of mobility needs and the resulting demand for urban transport services cause the entities in need of these services to look for the possibility of satisfying it. The arising demand shapes the supply of transport services, which like the demand and the prices, is a dynamic element of the market. It is an expression of the intention of transport service providers, who in the existing conditions want to sell a certain volume of these services at given prices. In view of the market offer presented by the urban transport provider, entities on the demand side of the market make decisions on whether to:

- make use of the offer presented by the urban transport provider;
- satisfy the needs on their own;
- partly satisfy the needs on their own and also use the offer of the urban transport provider;
- choose not to satisfy their mobility needs at all.

The core of the urban transport services generated and offered on the market is the carriage of people. The supply of transport services, however, is not limited to carriage only and includes a number of supporting services. The essential supporting services in urban transport are:

- services connected with organising and effecting the carriage;
- services connected with the sales of transport services;
- services incidental to travelling, e.g. food & drink, parking and retail services.

The supply of transport services on the urban transport market primarily depends on the regulator's funding ability with a given demand, the prices fixed by the regulator and the system of fare reductions and exemptions to bridge the gap between proceeds from

[1] A.Piskozub, Ekonomika transportu, Uniwersytet Gdański, Gdańsk 1977, p... 253.
[2] I. Tarski, Czynnik czasu w procesie transportowym, WKŁ, Warsaw 1976, p. 46; D. Rucińska, A. Ruciński, O. Wyszomirski, Zarządzanie marketingowe na rynku usług transportowych, Uniwersytet Gdański, Gdańsk 2004, pp. 56 and 116, and R. Tomanek, Funkcjonowanie transportu, Akademia Ekonomiczna w Katowicach, Katowice 2004, p.33.
[3] M. Ciesielski, J. Długosz, Z. Gługiewicz, O. Wyszomirski, Gospodarowanie w transporcie miejskim, Akademia Ekonomiczna w Poznaniu, Poznań 1994, p.54.
[4] A.Koźlak, Ekonomika transportu. Teoria i praktyka gospodarcza, Uniwersytet Gdański, Gdańsk 2008, p.114.

ticket sales and the transport services cost of sales. It should be noted that lack of profitability of transport operations is not, from the provider's perspective, a reason for discontinuing them. An important factor is also the extent to which the market is regulated, as it determines the degree to which it is open and competitive. Administrative constraints may be a barrier to the adequate satisfaction of mobility expectations and cause distortions of the market mechanism. Regulation may also concern access to transport infrastructure as well as organisational solutions, with implications for the presence or absence of specific operators in the market. The supply is also affected by the amount and the quality of infrastructure as well as of the fleet at the disposal of transport operators. The efficiency of the operators in fleet allocation and use is not to be overlooked, either.

Urban transport services are provided by operators differing considerably in size, the vehicles operated as well as their structure and legal standing. They may be public entities, whose scope of operations is strictly delineated, as well as private entities working to commercial objectives.

In drawing conclusions about the supply of services in the urban transport market, one must not forget the characteristics of transportation as a service, which[6]:

- is consumed at the time of its generation;
- is immaterial;
- is non-durable and cannot be stored;
- is difficult to standardise due to lack of homogeneity.

Moreover, the specific nature of urban transport supply is in its bidirectionality, as a result of which the existing capacity is not evenly utilised during the to/from trips, while maintenance and transport work has to be done on a continuous basis.

Price as an element of urban transport market

The market element that balances the demand and the supply is the price. Firstly, however, the price directly affects the size of the demand. The relation between the demand and the price is a reflection of the price elasticity of demand. This is a very important indicator, which determines the pricing policy of urban transport provider and the capacity to generate the planned revenue. In practice, price elasticity of demand is difficult to determine because of demand volatility and the distorting impact of external factors. Nevertheless, even with a price elasticity index that is not quite precisely defined, it is possible to make forecasts about the possible effects of price adjustments and to assess the influence of external factors raising or lowering elasticity level[7].

The pricing methods in urban transport based on the costs, the demand or competitor indexing, are adjusted by the local or regional authorities with regard to social and transport policy goals. Possible regulation is determined by the amount of funding available in the municipal budget for urban transport services and infrastructure.

Cost-plus pricing is based on unit costs augmented by a profit margin, to produce the final price. It should be noted, though, that pricing based on average values may render transport capacity optimisation impossible. This is why, in building fare systems, one should not discard the possibility of pricing based on marginal costs, referring to the existing market and marketing situation. For example, lower load on the urban transport system during off-peak hours or weekend days may foster fare diversification as a demand booster.

In demand-based pricing, prices for urban transport services are determined on the basis of market research and the identified relations between the potential demand, the effective demand and the price. The use of this method requires market segmentation and analyses taking into account price elasticity within individual segments. Studying the demand as well demand-price interrelations is recognised to be the method which to the greatest extent reflects the nature of marketing management. It is, at the same time, the most difficult and costly to implement. The use of this method is fostered by the monopolistic pattern of the urban transport market and the absence of intermodal competition. The constraint is the limited possibility of fast and flexible pricing in response to the changing needs of the urban transport service buyers, due to long and complex procedures that city councils have to follow when approving urban transport prices.

The competitor indexing method means that prices are determined on the basis of an examination of prices and properties of substitution offers. With competition, both intermodal and intramodal, playing a marginal role in urban transport market, the benchmark against which prices are judged is the cost of car use for urban trips.

In practice, more than one pricing methods are used for price calculation. The pricing freedom in the urban transport market, however, is limited because of regulation, which takes the form of fare systems decided, within the existing national laws, by the municipality.

The pricing process is determined by a number of factors. The most important of them are internal factors, like the structure, the level and the nature of the costs, competitor strategies, internal substitution. Of the external factors, most important are the general economic situation, transport policy, market composition and the degree of competition ad well as external substitution[8].

The pricing policy of the municipality and the urban transport provider acting on its behalf should reflect and be adjusted to the specific features of the market. If prices are diversified, they should be tailored to individual market segments. Prices determined with due regard to the nature of individual segments can produce better economic effects for the urban transport provider and, consequently, the operators engaged by the provider. Furthermore, price management should take account of the role of distribution channels in the pricing process. Appropriate incentive programmes for the agents selling transport services can be considered with a view to achieving the desired effects of transport operations.

Conclusion

What makes urban transport market special is the interference of public administration into the market elements of demand, supply and price. This interference causes a distortion in the functioning of the market mechanism.

Public administration interference into the demand takes the form of, above all, fare reduction or exemption entitlements granted to certain passenger groups. Interference into the supply concerns the transport offer as parameters of this offer are defined in terms of both quality and quantity. This is possible by controlling the amount of funding from budget grants and proceeds from the sale of the services. The latter are largely determined by the system of fares approved by the public authority. The approval of a fare system is interference into prices.

Market mechanism distortion in the urban transport market restricts the functioning of the mechanism. If high productivity of the urban

[6] Marketing usług, ed. A. Styś, PWE, Warsaw 2003, p. 36.
[7] R. Tomanek, op. cit., p. 69.
[8] R.Tomanek, op. cit., p. 70.

transport business is to be ensured, conditions should be created in which the market mechanism could be used to the greatest extent possible, with due regard to the existing limitations.

The competition mechanism also favours greater productivity in the urban transport market. While the function of service provider can be performed by one entity, there may be numerous transport service operators. Competition processes help to verify the costs of the service and usually contribute to its better quality.

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Sugar Project – city logistics best practices sharing

Introduction

OECD[1] experts in their work 'Knowledge Management in the Learning Society' state that knowledge plays a pivotal role in economic development but it is difficult to gain and measure and remains unverified in many branches. Therefore, there are many definitions and interpretations of 'knowledge'. From the economic point of view data, information and knowledge are a separate kind of economic goods and their usefulness is defined [8]. Knowledge is a collection of statements which describe the world we live in. Certainly the world is changed by new information. Information is a regularity that can be noticed in data describing space, time and energy and gaining it involves economic costs [8]. In this way we can see the process of transformation: data are changed into information and then into knowledge.

KNOWLEDGE TRANSFER

Undoubtedly, knowledge is becoming the basic source of an enterprise. That is why, the issue of knowledge transfer is extremely important nowadays as this knowledge is difficult to transfer. The term 'knowledge transfer' is not precisely defined. Knowledge transfer refers to transmitting ordered and interpreted pieces of information, not necessarily technical information but it can be e.g. knowledge concerning logistics or marketing.

Dissemination of knowledge is a very big problem for many organizations. In order to the knowledge could be effectively used, there must be capable of transfer and making available it to organizations and individuals who at the time it needs [9, p. 81]. Knowledge transfer involves two types of activities:

- Transmission of knowledge.
- Absorption of knowledge.

The transmission it is a process of presentation of knowledge to a potential recipient, while the absorption of it is a acquisition for later use. If knowledge is not "absorbed" by the recipient, there won't be able to hold a transfer, although there has been transmission [4, p. 106]. Thus, for knowledge transfer all of these processes are necessary.

When trying to analyze the issue of knowledge transfer we should name four elementary sorts of knowledge which go back to ancient times [6]:

- Know-what.
- Know-why.
- Know-how.
- Know-who.

Know-what knowledge shows factual knowledge and refers to definitions of terms. Know-why knowledge is knowledge about rules and laws of nature, human mind and society. This type of knowledge is crucial in some fields of science such as chemical or electronic industry. Access to this kind of knowledge speeds up technological development and prevents making mistakes in the stage of experiments. Know-how knowledge is unique for every organization. This sort of knowledge is usually one enterprise's or one research team's domain. However, cooperation between individual organizations results in networks of connections which allow transfer of fragmentary know-how knowledge. Know-who knowledge indicates the knowledge owner, people or institutions that know exactly what to do. This type of knowledge is fundamental for creating specific structures which provide access to experts who can help to solve problems in the changing world.

At this point the issues of public and private knowledge should be dealt with. Undoubtedly, knowledge is a very unique commodity because it is partly public and partly private. Know-how knowledge is a type of knowledge with very limited public access and its transfer is very complex because this knowledge reflects personality of a given organization. Know-how knowledge will never become a public commodity and it can become available to enterprises only by employing experts or by strategic alliances with other companies. An example of public knowledge is know-who knowledge because almost everyone has the access to the Internet and can find information about experts and companies there. This knowledge is available to everybody. However, some knowledge is neither only public nor only private because know-what knowledge may be unavailable to those who do not have perfect IT technology or connections with social networks.

You should pay attention to the fact that hidden knowledge is very difficult to transfer. The more hidden this knowledge is, the less available to enterprises or public sectors it is. The way of transferring knowledge depends on the nature of knowledge transferred.

There are five types of knowledge transfer [5]:

- Serial transfer.
- Near transfer.
- Far transfer.
- Strategic transfer.
- Expert transfer.

Serial transfer applies to a team that does the same tasks. In serial transfer the source team and the receiving team are one and the same. This transfer prevents repeating expensive mistakes and increases the efficiency of tasks.

In near transfer the source team is different from the receiving team. The main difference is location of both teams performing a specific task. Near transfer offers transferring explicit knowledge from location to location. It is widely used in transferring best practices.

Far transfer deals with transferring tacit knowledge. The source team and the receiving team perform unrepeatable tasks. Knowledge is transferred by interpersonal relations on the request of the receiving team. Far transfer provides transferring very specialized knowledge and brings about significant effects.

Strategic transfer applies to difficult complex situations. This type of transfer impacts large parts of the system, sometimes even the whole system, and differs from far transfer which impacts only one team or

[1] OECD (Organization for Economic Cooperation and Development)

unit.

The last type is Expert Transfer. It refers to very complex problems which are beyond the scope of knowledge of the team dealing with them. Knowledge of an expert who prepares opinions is needed.

The kind of transfer depends on the knowledge transferred. It is of great significance to choose the best way of knowledge transfer as influences the effectiveness.

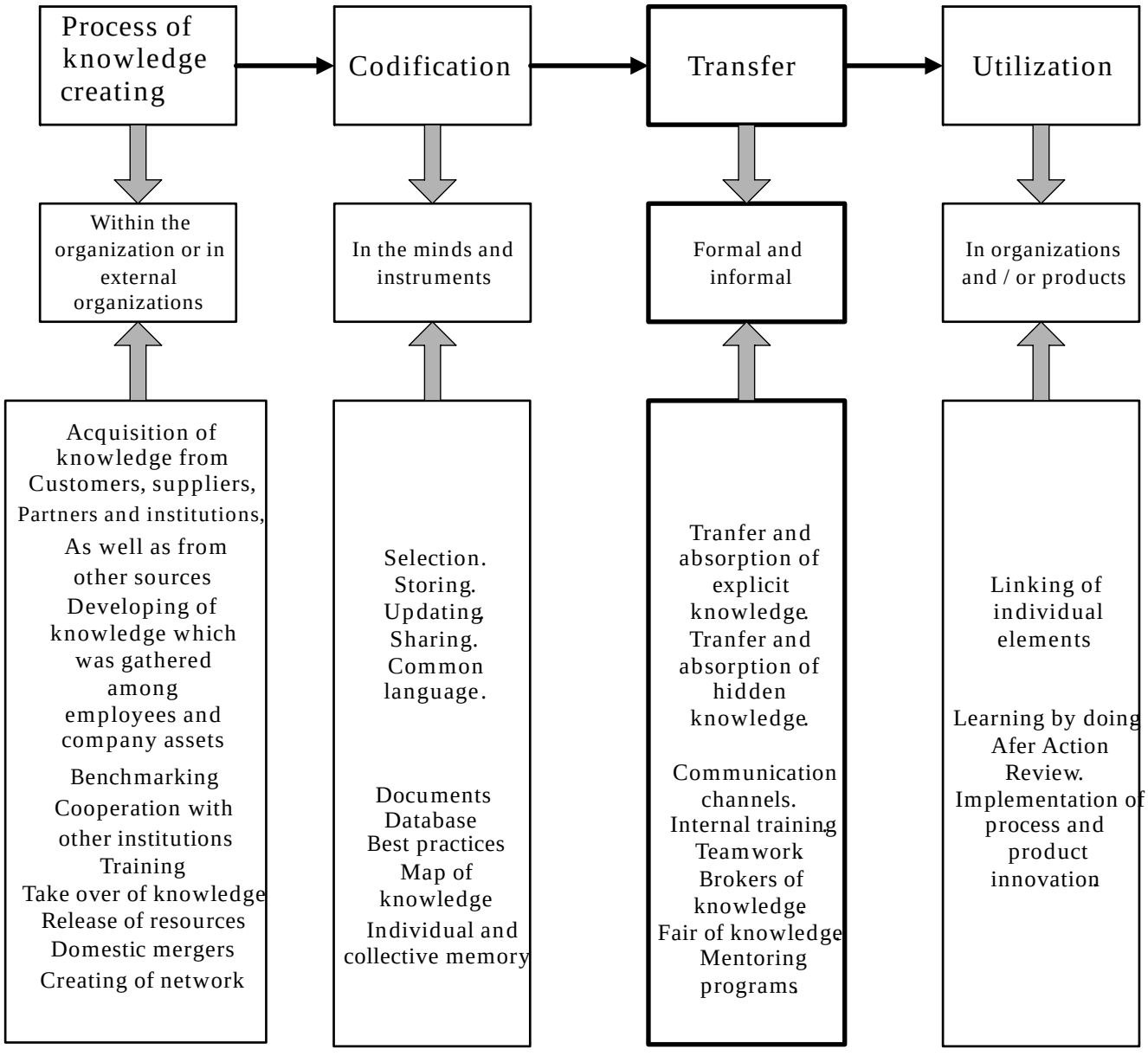
Stages of knowledge transfer are presented in figure 1.

3. Sugar project

Example of project which illustrates knowledge transfer in modern logistic solutions between chosen cities is SUGAR (Sustainable Urban Goods Logistics Achieved by Regional and local policies). Sugar project was successfully integrated into the INTERREG IVC Programme in 2009 year and will be run until the end of February of 2012 year.

SUGAR aims to address the problem of inefficient and ineffective management of urban freight distribution, a critical component of the

Figure 1.



Source [4, p. 104, 9 p.. 81]

The following chapters of this publication discuss best practices concerning city logistics and examples of knowledge transfer to regions, results from experience gathered by the authors from SUGAR project.

overall urban transport system and a primary source of vehicle pollutant emissions. To accomplish this goal, the projects promotes the exchange, discussion and transfer of policy experience, knowledge and good practices through policy and planning levers in the field of urban freight management, between and among Good Practice and Transfer sites.

The SUGAR partnership brings together 17 institutions divided in [11]:

? 4 good practice sites representing the Emilia Romagna Region (IT) and primary European cities such as London (through Transport for London) (UK), Paris (FR) and Barcelona (ES).

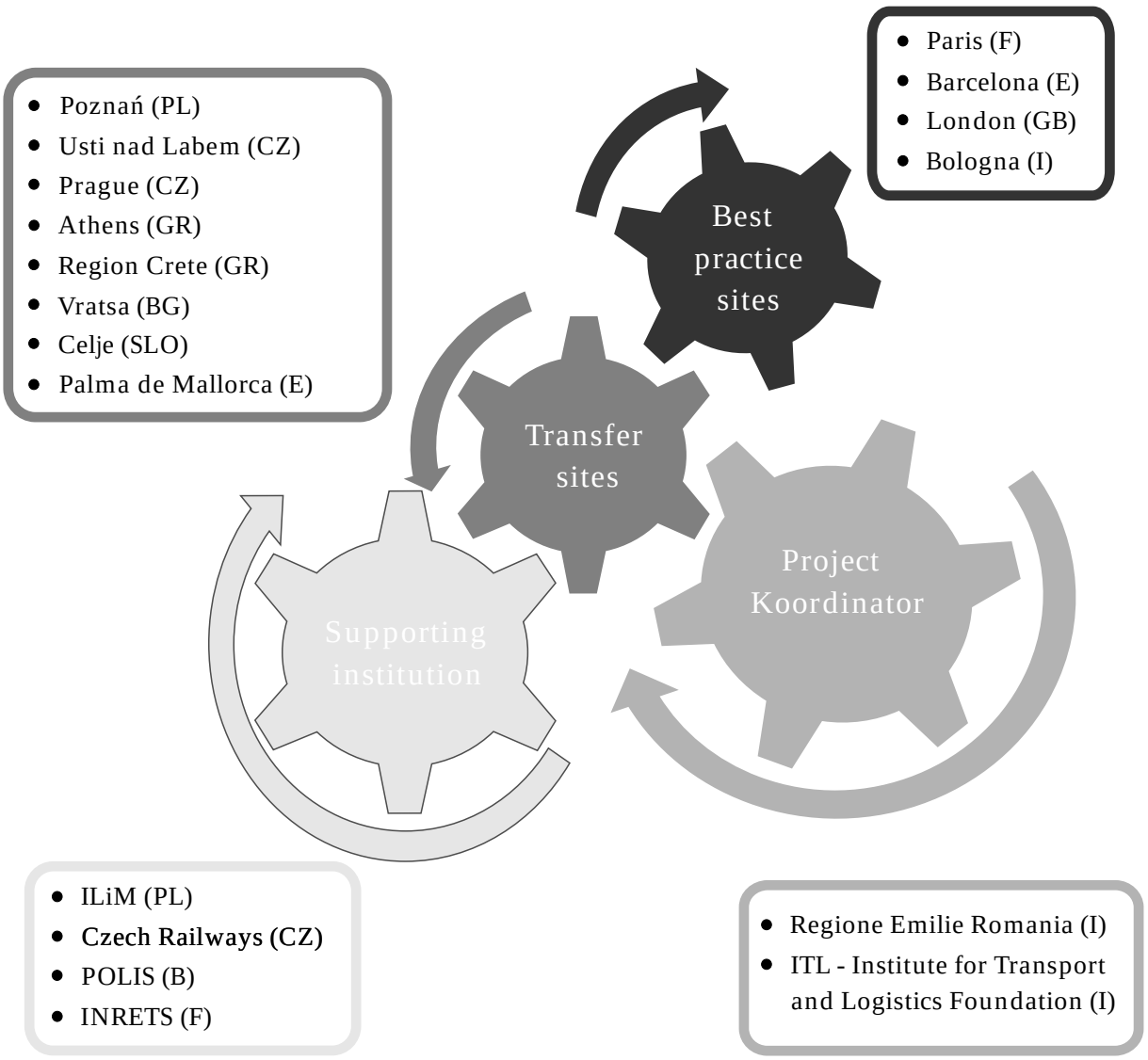
? 7 European transfer sites, ranging from small to large cities and regions. Palma de Mallorca (ES), Region of Crete (GR), Poznań (PL), Vratsa (BG), Celje (SL), Usti nad Labem (CZ), Prague (CZ)

.? 2 European networks targeting key public administration stakeholders working in transport: POLIS (BE) at the local/regional level and CEI (IT) at the national one.

? 4 public equivalent bodies in the policy making activities of three SUGAR sites: ITL (Emilia Romagna Region site-IT), INRETS (Paris site-FR), ILIM (Poznan site-PL), Czech Railways (CZ).

Exchange of good practices works as a lever which stimulates the development of local action plans in urban logistics.

Draw 2. SUGAR Project consortium



The policy leverages covered include [11]:

? transport: access control, circulation, regulation pricing, signage, intelligent communication technologies applied to transport, etc.

? environment: incentives for using clean vehicles and modes, regulations on vehicle typologies and usage in critical environmental zones, etc.

? space and territory: planning and development of distribution areas, loading areas, industrial zones, economic development zones, etc.

These policy leverages, together with partnership building with logistics and transport operators, are the necessary ingredients to creating a tailored solution for more efficient urban freight transport

management.

The purpose of knowledge transfer between the stakeholders of the project is solution the problem of inefficient and ineffective management of urban goods transport, which is a very important element of urban transport system, as well as a significant source of pollution emissions.

The SUGAR activities are divided in 3 main pillars:

? Collection, analysis of the best practices and identification their key performance indicators.

? Knowledge transfer takes place during:

- Good Practice Round Table.
- The Trainers Sessions.
- Joint Planning Exercise which are dedicated to transfer sites.
- Site Visit where are presented some examples of logistical problems solutions.

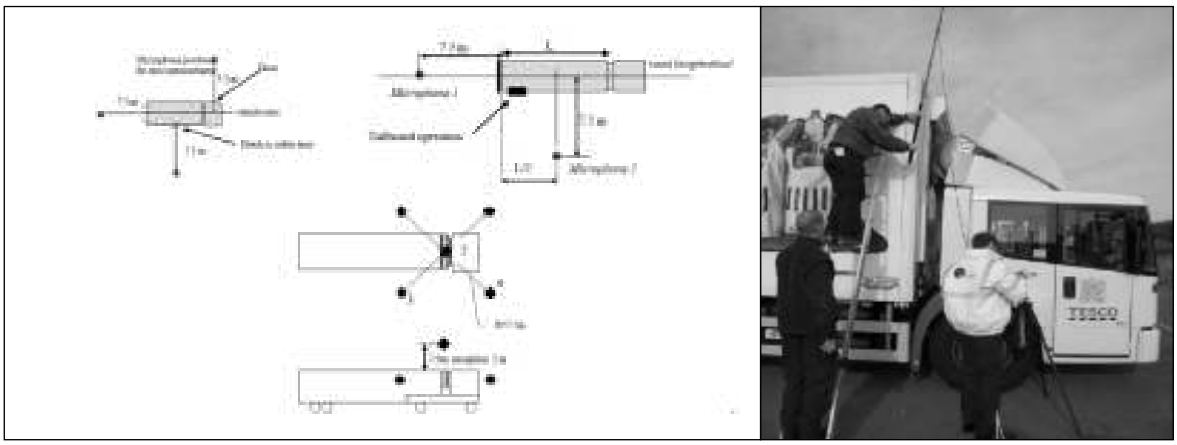
? Developing plans (vision and strategy) for urban logistics activities for all sites involved in the project.

4. SELECTED BEST PRACTICES IN CITY LOGISTICS

The following chapters of this publication discuss chosen examples of successful solutions used in city logistics. These solutions could provide a possible source for knowledge transfer. Identified best practices are the result of work carried out under the SUGAR project City Logistics Best Practices a handbook for Authorities.

4.1. Night deliveries noise emission standards

Objective of the night time delivery policy is to allow more silent trucks to operate in city centre area in late hours in order to avoid congestion, while respecting the noise legislation. Special trucks, special equipment and corresponding driver behavior are the conditions required.



Draw 3. Noise emission analysis scheme

Draw 4. Example of realization of supply at night for supermarket

In 1998 the Dutch Government set out standards for noise emission during loading and unloading in retail trade and craft businesses. This resulted in a project called PIEK and in 2004 in the PIEK certification scheme for vehicles and equipment operating under 60dB(A) which will be suitable for use in night time deliveries without causing noise disturbance. To achieve the standard, each product is acoustically measured and must function emitting under 60dB(A) at 7.5 meters from the sound source. It is then deemed suitable for out-of-hours delivery that will not cause noise disturbance to nearby residents.

In 2007 the Albert Heijn retail chain has started 10 pilot projects at the same time. The aim of project was realization of supply to selected supermarkets at night and early morning. During the three month period there was realized around 1000 supply by vehicles and equipment specially adapted and satisfies the requirements of the PIEK program.

The following table provides a comparison of selected economic and environmental parameters obtained before and after implementation of

Table 1. Comparison of economic and environmental parameters

Parameters	Before PIEK program	After PIEK program
Tilburg – Eindhoven distance [km]	35	35
Average time [h]	1,5	0,5
Vehicle	Volvo FH400	Volvo FH400
Distance year [km]	210 000	210 000
Average fuel consumption [L]	43	33
Driver labor cost [Euro]	20 700	8 100
Fuel cost [Euro]	90 300	69 300
Total cost per truck [Euro]	111 000	77 400
CO2 emission [t]	244	187
HC emission [kg]	4	4
NOx emission [kg]	633	486
PM10 emission [kg]	10	7

the PIEK program on a particular route: Tilburg - Eindhoven.

Analysis of above table shows that after the introduction of PIEK standard there was achieved significant economic savings (decrease total cost of transportation about 33 600 Euro) and reduction of environmental pollution about 30% (eg nitrogen oxides emissions and carbon dioxide).

4.2 Intermodal transport Monoprix

Since 2007, Monoprix, a large French distribution group (a subsidiary of both Galeries Lafayette group and Casino), has reorganised its logistics supply chain from road to rail for the incoming products of its 62 supermarkets in Paris[3].

The initial initiative came from the national Ministry of Transport and its regional branch (DREIF[4]). They looked for potential experiments for regional rail transport (short lines). Monoprix volunteered to test the project.

Before the trial, Monoprix delivered its 60 supermarkets in Paris by trucks from a terminal 35 km South of Paris.

In order to anticipate a more and more restrictive regulation for deliveries in urban areas, Monoprix decides to deliver some of its products (non alcohol beverages and general products such as textile, home and leisure articles, perfumes) by train.

The goods are moved to a rail terminal located within Paris (Bercy station in the East) and the final deliveries to the supermarkets are made by CNG trucks.

Today, a weekday train with 20 wagons arrives late in the evening to Paris. In the next morning CNG trucks deliver 60 supermarkets in Paris. The rail-road intermodal depot is used only for transhipment, with no other logistics activities.

Technically, it was necessary:

- To move 210,000 pallets/year equivalent to 20 wagons/day.
- To find a slot on the railway line (RER D) without hurting passenger traffic.
- To do works to connect the 2 terminals to the railway networks (rail sidings).
- To soundproof the terminal in Paris, to make it HQE (Environment High quality.

Financial constraints for the operator: purchase of CNG vehicles, purchase of CNG from a single gas station operator on the site, due to a lack of available CNG stations in the area.

Decision making constraints: the reorganisation of logistics operations was only possible for a restricted amount of delivery products, not for fresh food, therefore the standard trucks deliveries is still running in parallel to the CNG deliveries.

Draw 5. Intermodal depot Bercy in Paris

15 months after the beginning, the energy savings are less important than expected but remain significant

[3] First delivery of foods by train was executed AT 28/11/2007y.

[4] Direction régionale de l'Equipement d'Ile-de-France

Table 2. Environment parameters reduction level [1]

Parameters	Reduction level [%]
CO_2(carbon dioxide)	25
CO (carbon monoxide)	7
Nox (nitrogen oxide)	50
Particulates	16

4.3 Pneumatic waste collection system

One of the most usual problems in the historic centers of many old cities is the collection of solid waste. With the aim of offering a more streamlined and convenient waste collection service for citizens and shopkeepers in certain areas and in the more singular districts of the old city, the Pneumatic Waste Collection system has been introduced in Palme de Mallorca.

This system transports the waste from the pillar boxes installed on the public road to a central collection plant, by means of a network of underground tubes. Once in the centre they are placed in large containers for subsequent transportation to the Treatment Centre. Pneumatic Waste Collection functions successfully in the centre of Palma since 2002, and as a result around 24,600 citizens and big amount of commercial shops benefit from this modern system. The system collects around 4500 tons per year, with an average of 14,2 tons per day.

Draw 6. Pillar boxes for waste

Draw 7. Pillar boxes for recyclable materials

Waste is transported by a current of compressed air to a central waste collection plant through the use of an underground network and waste drop off points. At the central collection plant the waste is sorted and automatically placed in large hermetically sealed containers andcompacted before being transported to a waste treatment or disposal centre.

The main advantages of pneumatic waste collection system are:

? Reduces the visual impact of containers and having waste in public thoroughfares.

? Improvement of street image and environmental quality.

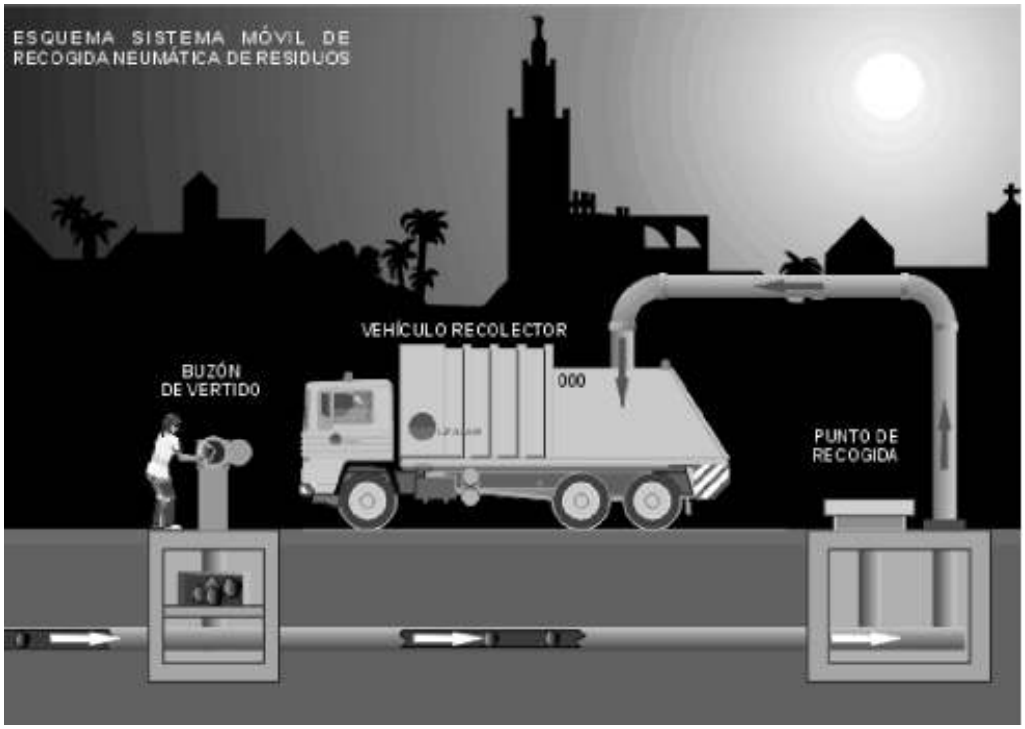
? Noise reduction and environmental impact (no collection vehicles needed).

? Bad smells reduction (especially important in the summer).

? Dirt and liquids reduction.

? Greater space available for parking.

? Allows for selective waste collection at source.



Draw 8. Waste collection system scheme

Draw. 9. Central collection plant hermetically sealed containers for waste

5. Conclusions

In case of the SUGAR project we deal with near transfer since explicit knowledge is transferred from location to location. In the discussed project knowledge is transferred from good practice site to transfer site. SUGAR project, for most transfer sites, is first attempt to transfer knowledge in the field of city logistics. Each transfer site has appointed a variety of purposes, such as, limiting access to the center for the heaviest vehicles, establishment of public - private partnerships in the field of infrastructure investment and finally to improve the supply in heavily urbanized areas. An example of proper utilization of the results of the SUGAR project is the city of Poznan. On the basis of experience and accumulated knowledge, Poznan plans developing the fifth, missing city's transport policy in the field of urban logistics[5]. There are many ideas and initiatives, but the primary factor in the effective transfer of good practices is consequence in the implementation and ongoing consultations with stakeholders (eg entrepreneurs, logistics operators and inhabitants).

Foltyński, Guszczak

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[5] So far, four programs have been developed which elaborated transport policy of Poznan city: public transport, parking policies, cycling program and road program.

The Influence of Personal or Others' Gain on Moral Self-Esteem and Inclination to Take Risk

Abstract

Nowadays, in countries with an individualistic culture, which Poland also belongs to, we can observe the occurrence of two ethical principles that influence the behaviour of individuals - egocentric ethics and hedonism. They influence the general social functioning of an individual as well as the process of making judgements and decisions. The research carried out aimed at verifying the hypothesis of a more positive perception of own morality and integrity after performing an action resulting in a personal gain. In order to do that 90 persons that were appropriately assigned to two experimental groups and one control group were examined. The examined individuals, depending on the experimental condition, participated in a decision-making game with a stake of 50 PLN that could be gained either for themselves or for an orphanage. The outcome confirmed the initial hypothesis. The research has shown that in the group acting for personal gain there was a strong positive correlation between the amount of the winning and the perception of own integrity and morality. This did not occur in the group acting for others' gain. At the same time, persons acting for personal gain exhibited a significantly lower inclination to take risks compared with persons acting for others' gain. The outcome of the experiment can be applied to the economical sphere where actions that are being taken are very often seen from the angle of personal gain.

Keywords: self-esteem, risk inclination, morality, communitarianism, agency, personal/others' gain, Dictator game.

Theory

Poland, as the majority of European countries, is characterised by a high level of individualistic culture in which the individuals posses the so-called "independent me" with a strong focus on realization of personal goals, self-improvement and achieving personal happiness (Hofstede, 2000). Egocentrism understood as a way of thinking and acting that is characterised by a strong focus on self is a typical phenomenon for ethical principles in the individualistic culture. It manifests itself in perceiving everything from the angle of own business and views. Egocentric ethics consists of making subjective moral evaluations that, paradoxically, are perceived as absolutely objective (Epley, Caruso, 2004). This happens because it is constructed by automatic and unconscious psychological mechanisms. People see the world with their own eyes and perceive it through own senses, which means that their perspective of the world is based on direct experience, whereas they can only make deductions based on own observations regarding the way of perceiving the world by others' and the reasons for their behaviour. Due to the fact that judgement based on own experience is easier and faster than judgement based on deduction, people are inclined to automatically interpret situations in an egocentric way. The other phenomenon typical for the modern individualistic culture is hedonism, in the name of which pleasure and bliss are considered to be the highest good and the goal of life. The measure of life's goodness is in this case the balance of pleasure and pain - the more pleasure predominates the pain, the happier man is (Wojciszke, 2010).

A man often makes a judgement about others and himself based on two elementary dimensions of social perception - agency (linked to the notions of achievements, control and domination) and communitarianism (linked to the notions of affiliation, approval and intimacy). A lot of features with a high level of this judgement, both positive and negative, refer exactly to these two categories (Wojciszke, 2010). Communitarianism and morality are sometimes treated as synonyms. Communitarianism is, however, considered as a broader notion than morality as it also refers to the social functioning of human, and not only to the normative system of judgements regarding justice, laws and well-being.

Communitarian and agency features are often perceived as having unequal importance depending on whether the actor's or the observer's perspective is applied when judging a behaviour. In the first case, features attesting for agility are considered to be more important, as the actor gains from own competence, but loses from its absence. At the same time it is easier to reach positive conclusions, which is another reason why people, when they think about themselves, attach more importance to agency than communitarian features. By contrast, the perspective of an observer results in that the features linked to communitarianism, such as integrity and morality, become most important as by analogy their occurrence can be beneficial for the observer, whereas their absence is not detrimental to the observer's gain. Therefore agency plays a significant role in judgement of self, whereas communitarianism dominates the perception and judgement of others. Agency and communitarian matters function as semantically independent, but they are often psychological alternatives to each other. If the same behaviour is perceived in both dimensions, then its agency-based interpretation is accompanied by a tendency to ignore the communitarian significance and the other way round, which is indicated by a negative correlation between both interpretations (Wojciszke, 2005). The experiment carried out aimed at confirming the thesis that, in case of the perception of own of morality based on action for personal gain, there occurs an unusual effect - not only agency, but also communitarianism influences its level.

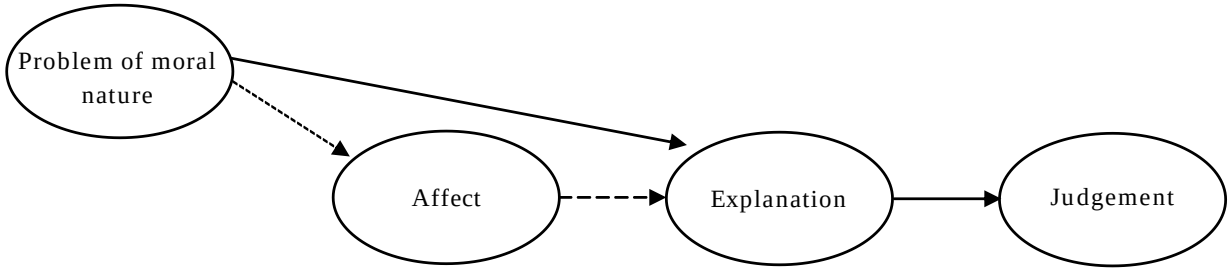
The psychology of morality remains dominated by the rationalistic approach saying that moral judgement is constructed based on the process of reasoning and reflection. It assumes that emotions linked to morality, such as compassion, can influence the reasoning process, though they do not constitute the direct basis of moral judgements passed. According to the above statement, a man passes a judgement in a given case based on such notions as justice, integrity or harm, not based on the experienced emotions.

The intuitionistic model is an innovative approach opposing the rationalistic one. It entails that there are some moral truths that are interpreted not based on rationalistic reasoning, but based on the process reminiscent of perception (Haidt, 2001). It means that the given person knows and feels that something is moral or not without being able to provide an explanation why it is so. By implication this model allows for the emotions to influence passing moral judgements. It means that people have a certain cognitive ability, which can be described as a moral intuition, that appears first, before the process of rational reasoning, and

is the direct reason for perceiving behaviour as positive or negative (see: Figure 2).

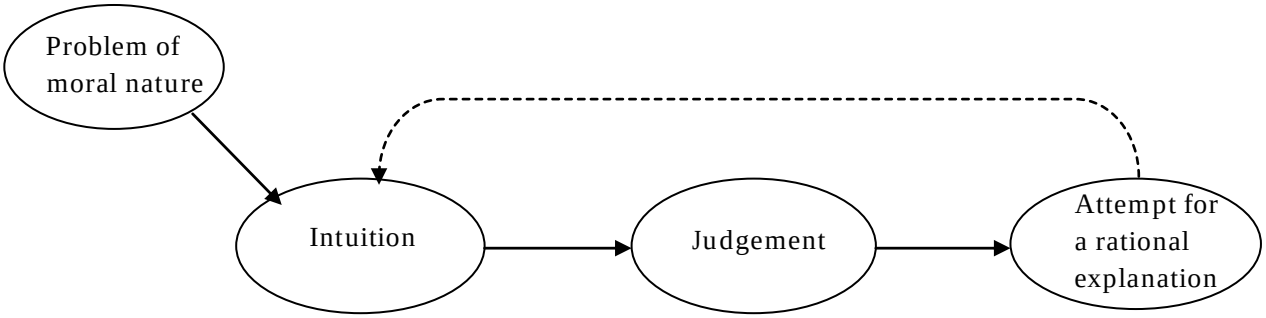
Self-esteem is defined as an affective reaction of the man on himself (Plopa, Wojciszke, 2003). Social psychology puts self-esteem from the processual perspective as a commonly occurring in people motive of self-enhancement, which is a striving for maintaining positive self-views (Fila-Jankowska, 2009). Biased processing of information about self, social comparisons or attribution of achieved results are some of the most important mechanisms that fulfil that function. Positive thinking about self and own morality is therefore not based directly on facts derived

Figure 1. The rationalistic model of passing moral judgements



Source: Haidt J., The Emotional Dog and it's Rational Tail: A Social Intuitionist Approach to a Moral Judgement, Psychological Review, 2001.

Figure 2. The intuitionistic model of passing moral judgements



Source: Haidt J., The Emotional Dog and it's Rational Tail: A Social Intuitionist Approach to a Moral Judgement, Psychological Review, 2001.

from the judgement of own behaviour, but on affective and biased processing of information (Baumeister, 2003). A good example can be the phenomenon common for egocentric ethics and hedonism, which is deeming as moral every behaviour that brings own gain. Both morality and own good constitute a source of strong affect, therefore actions for vested interests can be misinterpreted as moral. Another explanation for the changeability of moral judgement is referring to the construction of moral judgement of another person. It is dependent on how particular actions contribute to our good, which is a vested interest. When someone acts in our favour we are likely to think that it is a generally moral person, whereas when someone acts against our favour we consider the person as immoral. It is highly possible that the egocentric and hedonistic principle saying that 'the more gain, the more morality' works not only in relation to moral judgements of other people, but also to self-esteem. This is why presumably the judgement of own morality in reality does not change if we act for other peoples' gain, despite the fact that such action is considered to be altruistic and highly moral. At the same time it can be assumed that the judgement of own morality after performing an action resulting in own gain will, paradoxically, increase.

Human inclination to take risks depending on whether we act for own or others' gain is also thought-provoking. It can be gathered that the motive of self-enhancement, which is maintaining self-esteem at a satisfactory level, that often governs human behaviour will act stronger when our gain is at stake, not the others'. Consequently, higher aversion for risk should occur among people acting for own gain as a result of fear of bearing a personal loss which results in a temporary decrease of mood and self-esteem.

To summarize - the aim of the research was to provide an answer to two research questions:

1. Is the judgement of own morality and integrity going to be higher after performing an action serving personal gain and is this effect going to take place among persons acting in others' favour?
2. Are persons acting for own gain exhibiting higher aversion to risk compared with persons working in someone else's favour?

Method

Participants

90 persons, including 65 women and 25 men, aged on average M=27.82 (SD=7.29) participated in the research. These were students of the first three years of extramural studies in Psychology at the University of Social Sciences and Humanities in Sopot. They were divided into three

equal groups, including two experimental groups, in which manipulation was introduced, and one control group for comparison. Groups were selected at random.

Procedure

The research procedure was based on the rules of a decision-making game called 'The Dictator' and filling of two forms - Self-Description 30 (supplemented with two additional positions - integrity and morality) and Rosenberg's Self-Esteem Scale. Self-Description 30 was created based on the earlier mentioned division on two elementary dimensions of social perception - communitarianism and agency (see: Table 1).

The participants were informed that upon entering the room they become dictators who have the task of allocating at their sole option the amount of 50 PLN between themselves and the opponent (the researcher's assistant who is purposefully hidden behind a screen in order to avoid the influence of sex, physical attraction etc.) in a way that will make the opponent accept the division. It was stressed that the dictator can attempt to make a proposal only once without having the possibility to negotiate and explain the motives for their allocation. The participants obviously did not know that every time the opponent's task was to agree to the proposed conditions. The most important piece of information given to the participants was that real money is at stakes. The manipulation consisted of telling the participants from the first experimental group that the presumptive winning will be donated in their name to an orphanage. Signing a special declaration constituted a confirmation of the donation. The participants from the second experimental group were informed that they play for their own gain and the winning will be given to them in cash after completing the experiment. The control group did not participate in the game and they only filled the questionnaires.

Table 1. Agency 15 and Communitarianism 15 constituting Self-Description Scale 30.

Communitarianism	**Agency**
Friendly	Confident
Understanding	Effective
Caring	Consistent
Amicable	Ambitious
Willing to compromise	Energetic
Obliging	Enterprising
Kind	Strong-willed
Appreciative	Efficient
Compassionate	Having leadership skills
Supportive	Convincing
Helpful	Go-ahead
Forgiving	Resourceful
Understanding	Capable
Self-sacrificing	Decisive
Sensitive to others	Active

Results

Reliability analysis was conveyed using the Cronbach's alpha method. The Alpha statistics was calculated for both questionnaires filled by the participants and gave satisfying results.

The correlation analysis in the group acting for personal gain showed a statistically significant correlation between the amount of the winning and both integrity and morality accordingly at the level of $r = 0.42$; $p < 0.05$ and $r = 0.33$; $p < 0.05$. The scale of communitarianism also strongly correlated with agency, integrity, morality as well as the participants' self-esteem in the above mentioned group. The research has shown that in the group acting for someone else's gain there also occurred a significant correlation between the scale of communitarianism and both integrity and morality giving accordingly results at the level of $r = 0.39$; $p < 0.05$ and $r = 0.37$; $p < 0.05$. A significant and moderately strong correlation was also observed between agency and self-esteem. However, other variables did not show any correlations that would be statistically significant. For comparison, in the control group there was only a strong correlation between communitarianism and integrity $r = 0.533$; $p < 0.01$ as well as between integrity and morality $r = 0.540$; $p < 0.01$ (see: Table 2 and 3).

The regression analysis was conveyed in each of the groups - firstly with a general self-esteem, then with a judgement of own integrity and morality as a dependent variable and the amount of winning as independent variable. The regression analysis for self-esteem as dependent variable proved to be insignificant for both groups, which means that the amount of winning does no influence the level of general self-esteem. On the other hand, for the group acting for personal gain the research has shown that the regression line for integrity as dependent variable consists from the amount of winning with the result $B = 0.42$; $p < 0.02$ and the constant = 4.43; $p < 0.001$, which means that there is a positive correlation between the amount of winning and the judgement of own integrity. Analogical results close to the significance limit were also obtained for the variable of morality in a case, where the regression line also consists of the amount of winning $B = 0.33$; $p < 0.07$ and constant = 4.54; $p < 0.001$.

The second of the investigated variables was the inclination to take risks which can be estimated based on the participants' winnings. The average amount of winning in the group acting for the orphanage's gain

Table 2. Correlations between the observed variables in the group acting for others' gain.

	Winning amount	Communitarianism	Agency	Self-esteem	Integrity	Morality
Win	1	.151	.075	-.128	.214	.160
Self-esteem	-.128	-.199	**.490****	1	-.079	-.235
Integrity	.214	**.386***	.143	-.079	1	**.383***
Morality	.160	**.370***	.109	-.235	**.383***	1

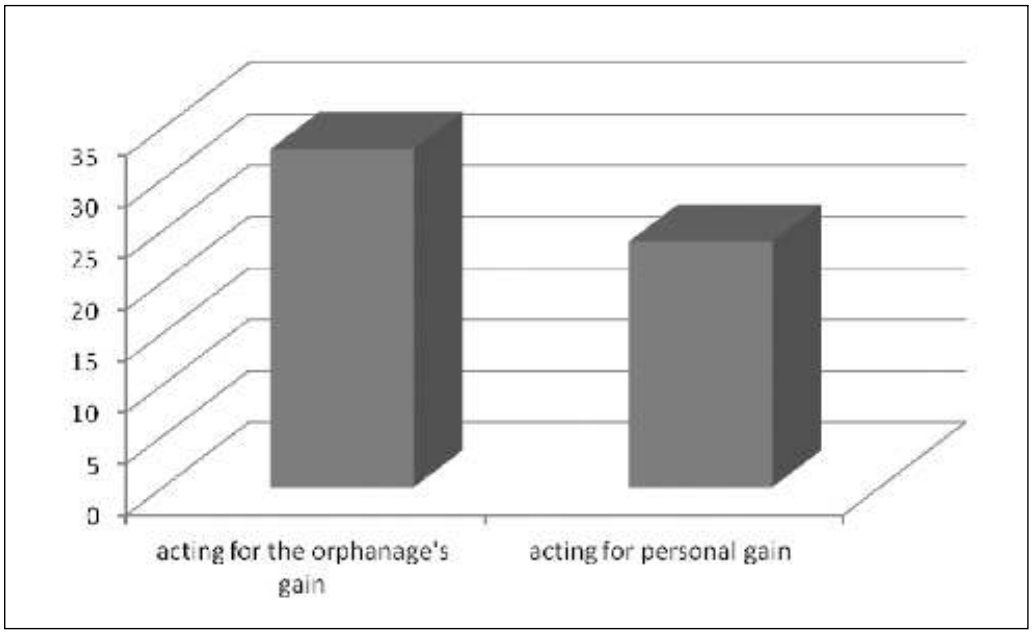
Table 3. Correlations between the observed variables in the group acting for personal gain.

	Winning amount	Communitarianism	Agency	Self-esteem	Integrity	Morality
Win	1	.069	.205	.154	**.420***	**.330***
Self-esteem	.154	**.394***	**.455****	1	.135	***.302***
Integrity	**.420***	**.339***	.145	.135	1	**.766****
Morality	**.330***	**.416***	.252	.302	**.766****	1

was M = 32.93 PLN, SD = 9.09 PLN, whereas in the group playing for personal gain the average level of winnings is significantly lower - M = 23.93 PLN, SD = 8.61 PLN (see: Figure 3).

Discussion

The experiment brought interesting and expected results. The research has shown that in the group acting for personal gain there is a strong and statistically significant correlation between the amount of winning and the perceived level of own integrity and morality. Slightly below the significance limit occurs also a correlation between self-esteem and morality. These effects do not occur in the group acting for someone else's gain nor in the control group. The above results show that acting for personal gain increases the perception of own integrity and morality. Paradoxically, this effect does not take place when acting for the orphanage's gain. It means that a person living in the individualistic culture subscribes to an egocentric principle that the most moral behaviour is the one serving personal goals. The explanation for that can be passing moral judgements in an incogitant, intuitive way deprived of moral reasoning and based solely on automatic evaluation. As a result, the relation between the given incident and personal gain becomes the base of a moral judgement. Since we act for personal gain most often and in the most consistent way, it should not come as a surprise that we consider ourselves as highly moral. Such way of thinking can lead to an anti-social way of functioning of individuals, also in the economical



sphere. Decisions made by entrepreneurs might not take into consideration the public interest and even act to its detriment, but at the same time be considered by them as just and moral. People living in countries with an individualistic culture should, therefore, be educated that the currently pervading ethics can influence their behaviour. Through that they might possibly become more sensitive not only to personal gain, but also to another person's welfare, as the first step to a change is always the realization of the existing problem.

The research has also shown that there is a statistically significant difference in the amount of personal winning and the winning donated to the orphanage. As assumed, it can be deducted that persons acting for personal gain are less inclined to take risks than persons acting for someone else's gain. It can be due to the fact that people presented with the opportunity of winning a particular amount of money quickly begin to visualize the situation in which they actually win it. If it happens otherwise, even though they do not lose anything, they perceive it like a loss. The willingness to avoid personal loss and connected to it feeling of defeat can be linked to an increased risk aversion. Similarly, in the economical sphere people with own businesses should be characterised by a lower inclination to take risks when making a decision than people acting in the public interest, which translated into the common good.

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Presentation of Mapcom Model

Introduction

In the last years experts agreed at national and European level on the need to build standard systems of competencies, based on transparent and shared terms and with the agreement of the involved stakeholders (institutions, social parties, entities and organizations for education and training), aimed at facilitating the "dialogue" regarding and the assessment and certification of the professional competencies of the citizens. Also in the apprenticeship sector it is clear the need of a common language and framework to help employers, internal and pedagogical tutors in identifying the competencies domains corresponding to the training need of the apprentice and thus define the most appropriate training path. For these reasons Region Friuli Venezia Giulia asked to the training providers already delivering courses to apprentices to develop a competence based model to provide a common reference for the design, delivery and evaluation of this typology of training. Furthermore the Regional government stated clearly the willing to use those standards as a reference for other typologies of training provided in the area (this process is ongoing).

The criteria the development of the model is based on are the following:

• transparency: we wanted to have a more comprehensible description of the training objectives and expected results of training activities programs, expressed in a language understandable by the final users (trainees, enterprises);

• stability: we wanted a repertory of competencies stable along time, for this reason be adopted as the reference point of our analysis the fundamental steps (key activities) characterising the various processes of transformation of products/services. Those processes were studied in non-contextual terms, i.e. not considering in first resort the organization in which they will be carried out (the organizational context);

• flexibility: we wanted a method that allows us to easily map occupational profiles pertaining to different contexts (organization, territory, economical sector, etc.), thus having as a result the "clusters" of competencies characterizing the professional profiles within each specific context of interest;

• standardization: we wanted a model able to favour efficacy in the design investment, homogeneity of the training results, modularity and reuse of the training products. All of this should be guaranteed by the definition of a common standard of CU (Certification Units) and TU (Training Units).

Notes: These needs are really relevant for all the countries –like Italy- where a national or regional APL systems (Accreditation of prior learning) aimed at allowing the inventory and validation of non-formal and informal learning are not yet available

So, the model is built around the following basic concepts:

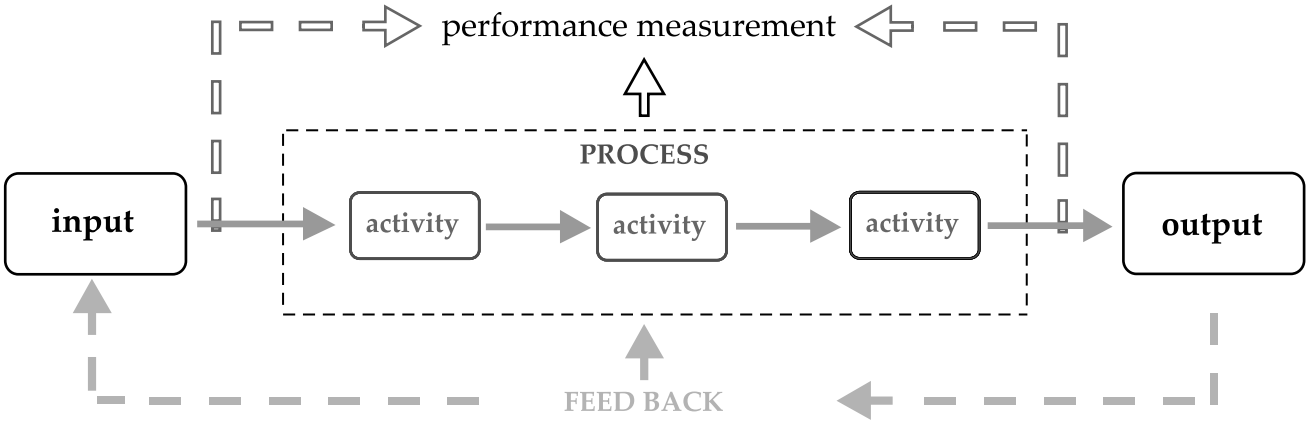
• process/ activity/ performance
• competence
• certification units
• professional profiles
• training units

Which thus need a further description, given in the following paragraphs.

1. Definition of terms

1.1 Process

A process is a sequence of production activities (transformation activities) which generates as a result a product/service useful to a client (internal or external).



On the contrary to a procedure, which describes the way the job is done (who should do what and how), a process defines the logical phases of the job (what should be done and why).

The activities are sequences of elementary operations and use specific resources to transform one or more inputs. Performance is generated by the completion of an activity.

Notes: All the processes have a common set of characteristics: a client (internal/external), borders (beginning and end), resources (human, technological, financial), constrains (time, volume, costs), a process owner - a process always: is a part of a supplier/client chain; has a feed-back channel; "cuts" transversally the organizational hierarchy.

1.2 Competence

Although the first "competence based" models of job analysis appeared in the early '70s, there is still no unique and clear corpus of

concepts describing competence. The concept took shape at the twilight of the Fordist Utopia, to meet the needs of re-building the meaning of actions within work organizations. It is therefore important to take the different theoretical models into account, acknowledging that different tools are legitimate depending on the use each one has or can do of them. In fact, the approaches that can be adopted are different depending on the fact that competencies are used as reference for:

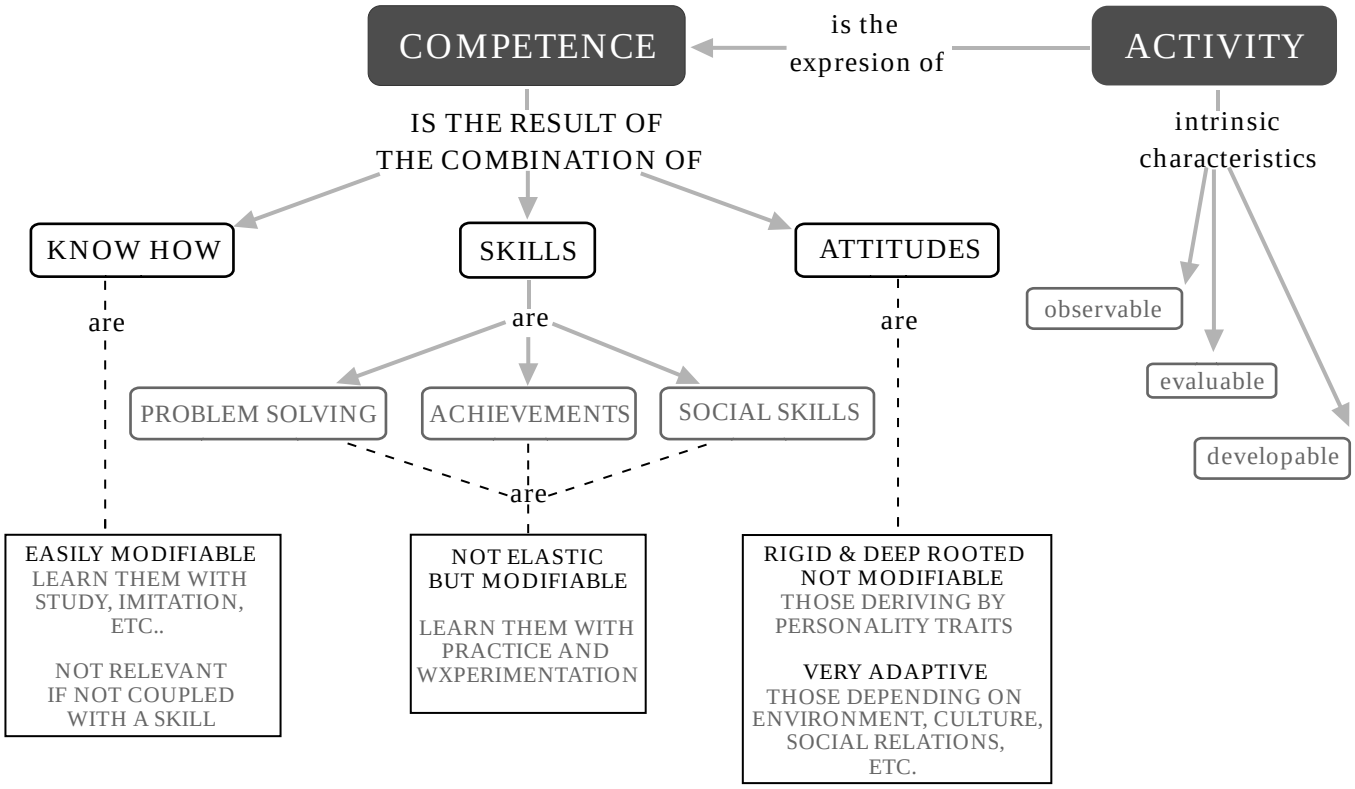
- for guidance and individual assessment,
- for recruiting,
- performance evaluation,
- Human Resources growth management,
- training design.

Notes: It is necessary to add, that the term competence can take on other meanings if, besides the labour market, we take into account the education system. In the latter in fact, the problems linked to the definition of competence as observable performance obviously increase due to the theoretical nature of the subjects taught in such institutions.

For training design and training need analysis purposes we can assume the following definition:

> Competence is the capacity to apply in an integrated way the individual resources to achieve an effective and recognized performance

In the model, we concentrate our attention on professional skills, and we try to link the skills that are classified in other ways (e.g. transversal, basic, relational, cognitive, etc) to those we consider as "professional" by relating them as far as possible to observable behaviours. External recognition is fundamental in the concept of competence adopted by the model. The following scheme tries to



summarize the elements characterizing the competence concept and its links with the activity concept:

1.3 Competence, activity and performance

After having defined competence, the next step deals with the term "activity" (and performance) and the connection it has to competence. The step is rather complicated, since all definitions of competence imply carrying out a task, but there is a lot of discussion about the possibility of inferring a "competence" looking at a "behaviour". In fact, you should not assume that by observing a performance one can automatically attribute competence to the person carrying out the performance. The only possible solution seems to be the following:

since we are never sure that a observable behaviour is an appropriate indicator of competence, it is necessary to bridge the gap between the two terms as much as possible, and ascribe the competence to a behaviour, not conceived as a finalized act but as an answer to a situation

(B. Rey, 2005). So the model adopted the following assumption: competences will be described as activities as they are the only observable thing: we will therefore use the term "activity" or "performance" instead of "competence" inside the training units and the job description schemes.

In particular we will concentrate our attention to those activities that can be considered "professional key activities".

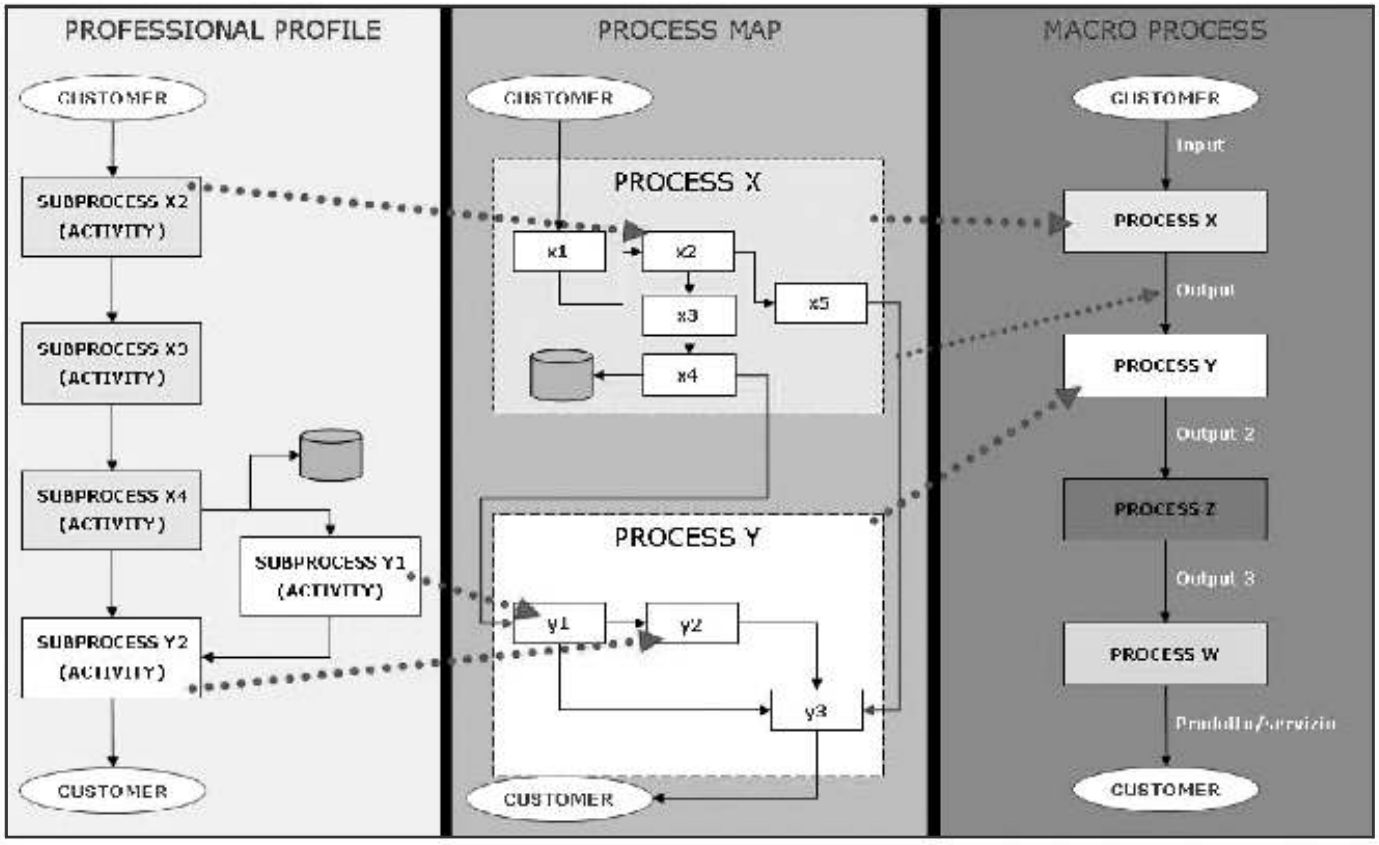
1.4 Professional key activities

The identification of the professional activities, distinctive and characteristic of an occupational profile, can be the outcome of different analysis approaches. A typical one is that to start from the identification of a professional profile, then specifying its role in key activities. It works, but it shows a very weak point: the professional profiles identification

needs the specification of a context, thus narrowing from the beginning the applicability of the results of the analysis to the specific organizational context; furthermore, the profiles change very easily in the globalized, unstable, turbulent labour market of the post-fordist age.

Process analysis seems to be the most stable and effective method not only for organizational improvement but also for the training needs analysis.

In particular, at least in first instance, the process analysis approach can be independent from occupational profiles and organizations (contexts), which are considered only in a following step. Being the analysis result is not based on a specific context, it guarantees a more general applicability and allows the definition of Certification Units, related to the various key activities of the transformation process (instead of key activities of the profile), that are invariant, stable, and that can therefore constitute the core of evaluation, certification and recognition systems for workers competences acquired in formal, non formal and



informal environments.

1.5 Testing, certification, recognition

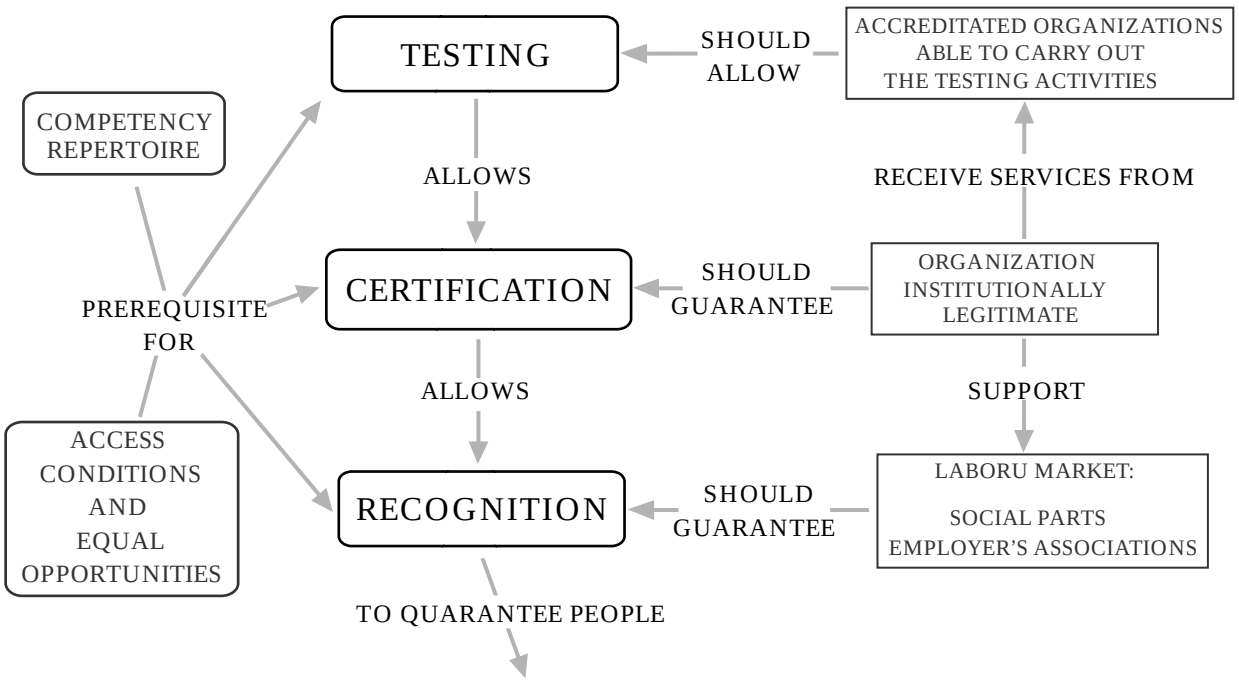
These terms are very often misused or used as synonyms, while they have not the same meaning and imply the intervention of different actors to be carried on:

• Testing, is the process of checking the capability of a person to carry out a specific activity (so to assess a specific "competence"). It should be carried out by accredited and authorized Organization by means of specific tests and protocols and with reference to a common repertoire of competencies.

• Certification, it is "a process, or a group of actions that foresee the use of tools and procedures, through which an accredited body states the possession and the existence of given objects", requires the involvement of institutions (Ministries, Regional bodies, Schools, Training agencies, Vocational Education Organizations, Certification and Standardisation Institutes, etc) authorised to issue certificates that have legal value. Generally this typology of standards is national and requires very long and difficult processes of definition of reference guidelines and legislative procedures, both national and local. The certification body is also responsible for the repertoire management and adjournment.

• Recognition, we consider it as "practice through which specific social and economic groups acknowledge meaning to the results of learning processes, giving them value", recognition requires the involvement of employers' associations, trade unions, companies that should make the competence verification and certification applicable in professional environments. They also should foster the "acknowledge of value" to official certifications and/or "not certified competencies" when these are significant for a specific economic/social group or territory. In the latter the "value" can also be local or sectorial and the timing depends largely on trade unions' negotiations, on the dialogue between local actors or on the real need a certain economic group has to adopt professional standards for the evolution of the market.

The following scheme tries to put the three concepts in reference with each other:



1.6 Classification of activities

When we describe what happens within a transformation process (work process), by splitting the key steps that constitute it into lists of activities, we adopt a three level classification system, which divides the activities according to their professional relevance:

KEY activities

each performance which is considered invaluable in guaranteeing the process turns out well and that has external visibility and professional recognition. A key competence is meaningful on its own. It corresponds to a sub-process and describes the transformation occurring within it. As a rule, it is directly associated to a Certification Unit;

COMPONENT activity

each performance considered as invaluable in guaranteeing the sub-process turns out well. They have less visibility in professional terms but are very useful for training purposes. As a rule they correspond to the "expected results" of a Training Unit. The definition of competence adopted by the model corresponds to this type of activity/performance.

ELEMENTARY activity

Each performance which cannot be broken down further into activities. They are useful for evaluation and training purposes but have very little significance in professional terms. They are a precious reference for the design of Training Units and observation grids for the evaluation of the professional performances.

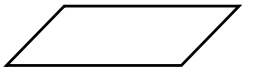
The following diagram show the connection between process elements and activities taxonomy:

2. Design process scheme

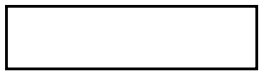
The following scheme shows the steps of the design process and the input/output implied in each step. It is important to specify that Phase (1) gives a result of general applicability, while Phase (2) is strictly related to a specific, identified, context (organizational, economical, geographical):

2.1 Process schemes

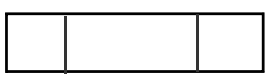
A simplified set of symbols is used in our process schemes. We don't need the detail of the quality systems ones, and also the flux representation is simplified:



Input data: brief description of process input (of any kind)



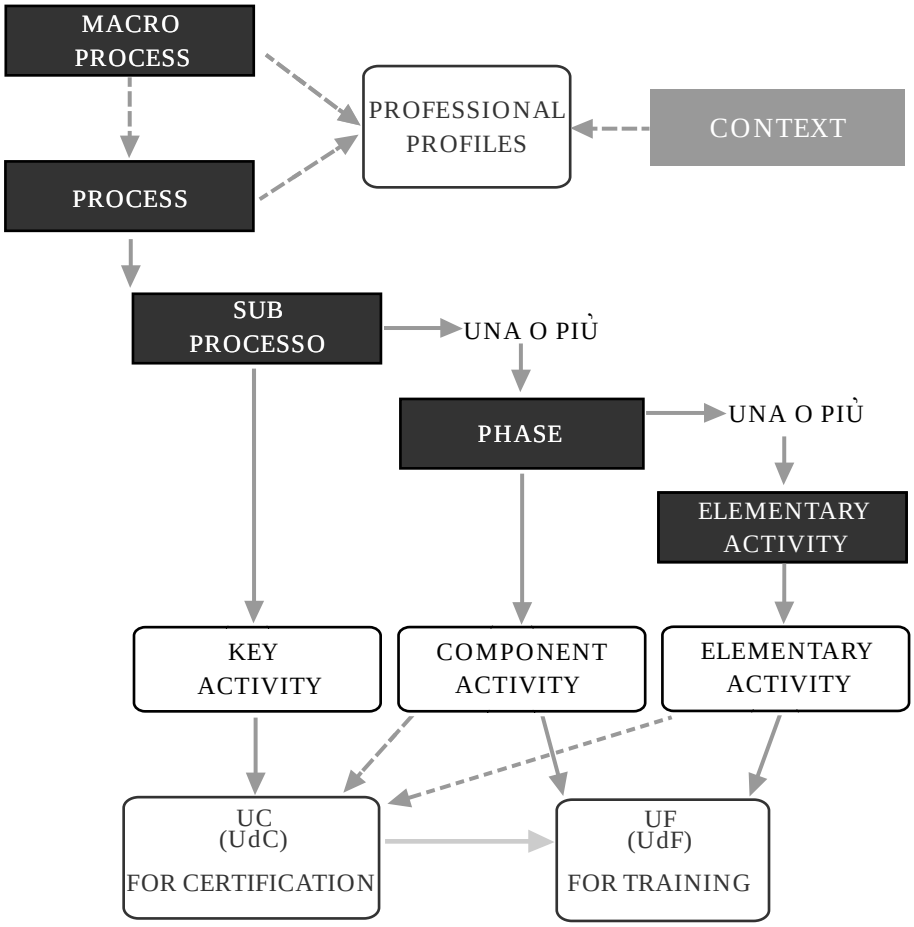
Process: brief description of the production process. Used inside macro-process schemes.

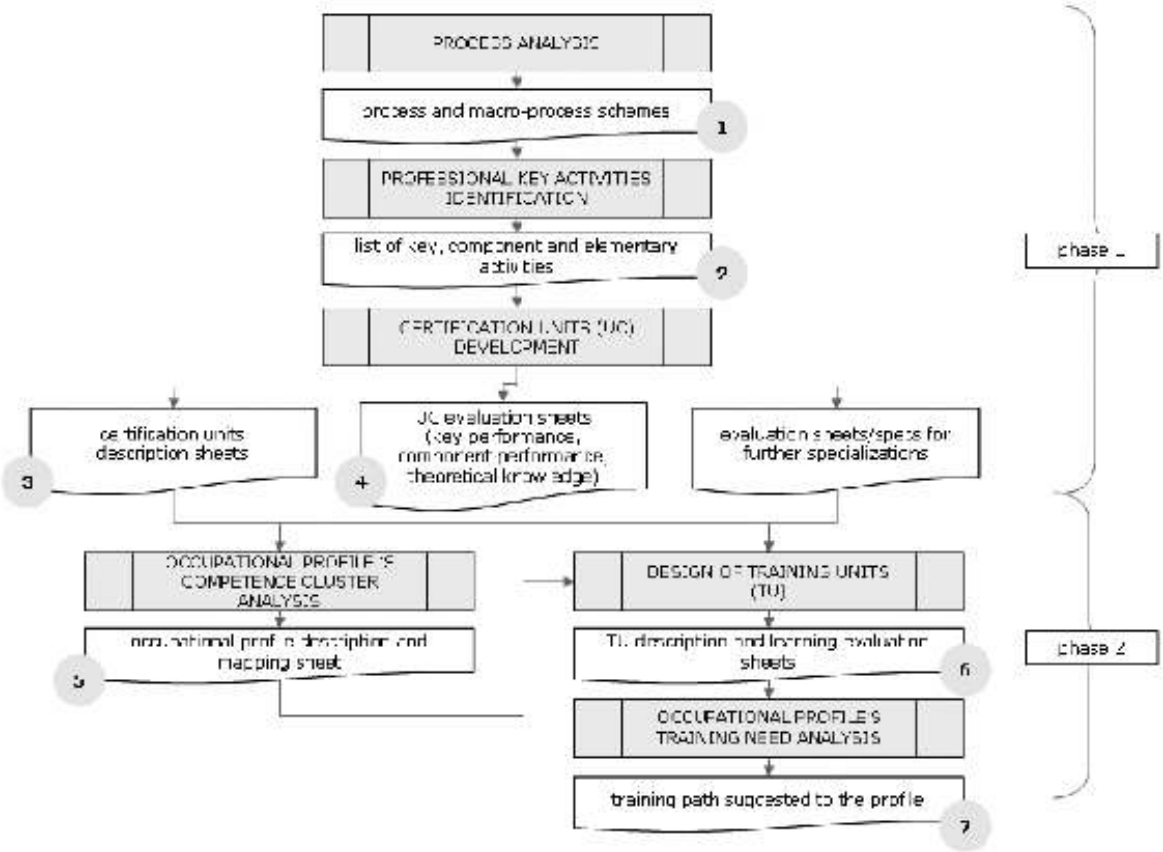


Subprocess: brief description of key activities in which a process is split.
Used inside Process schemes.

Output/Result: brief description of the product/service resulting by the activity carried out.

External Process/Subprocess: when a reference to an external process/subprocess is needed for completeness


MACRO PROCESS
PROCESS
PROFESSIONAL PROFILES
CONTEXT
SUB PROCESSO
UNA O PIÙ
PHASE
UNA O PIÙ
ELEMENTARY ACTIVITY
KEY ACTIVITY
COMPONENT ACTIVITY
ELEMENTARY ACTIVITY
UC (UdC) FOR CERTIFICATION
UF (UdF) FOR TRAINING


PROCESS ANALYSIS
process and macro-process schemes
1
PROFESSIONAL KEY ACTIVITIES IDENTIFICATION
list of key, component and elementary activities
2
CERTIFICATION UNITS (UC) DEVELOPMENT
certification units description sheets
3
UC evaluation sheets (key performance, component performance, theoretical knowledge)
4
evaluation sheets/specs for further specializations
OCCUPATIONAL PROFILES COMPETENCE CLUSTER ANALYSIS
occupational profile description and mapping sheet
5
DESIGN OF TRAINING UNITS (TU)
TU description and learning evaluation sheets
6
OCCUPATIONAL PROFILES TRAINING NEED ANALYSIS
training path suggested to the profile
7
phase 1
phase 2

Basically, the aim of a process scheme is to put in evidence the key activities (sub-processes) necessary to produce the awaited result (final output, product or service) and the intermediate outputs (that allow to verify if the key activities are correctly done).

The process scheme main use is discussion, matching and comparison. It should be used to gather more information from experts, to allow training designers, enterprises, workers, student to better identify and understand what we are talking about. The simplified process scheme is thus a tool for transparency. The schemes don't aim to be invariant and fixed, on the contrary they should be used to constantly renew and update the transformation activities description.

Example : a process for "Shop management"

Notes: as you see, the name of a process is NOT the name of a professional profile, but a name of a transformation or service.

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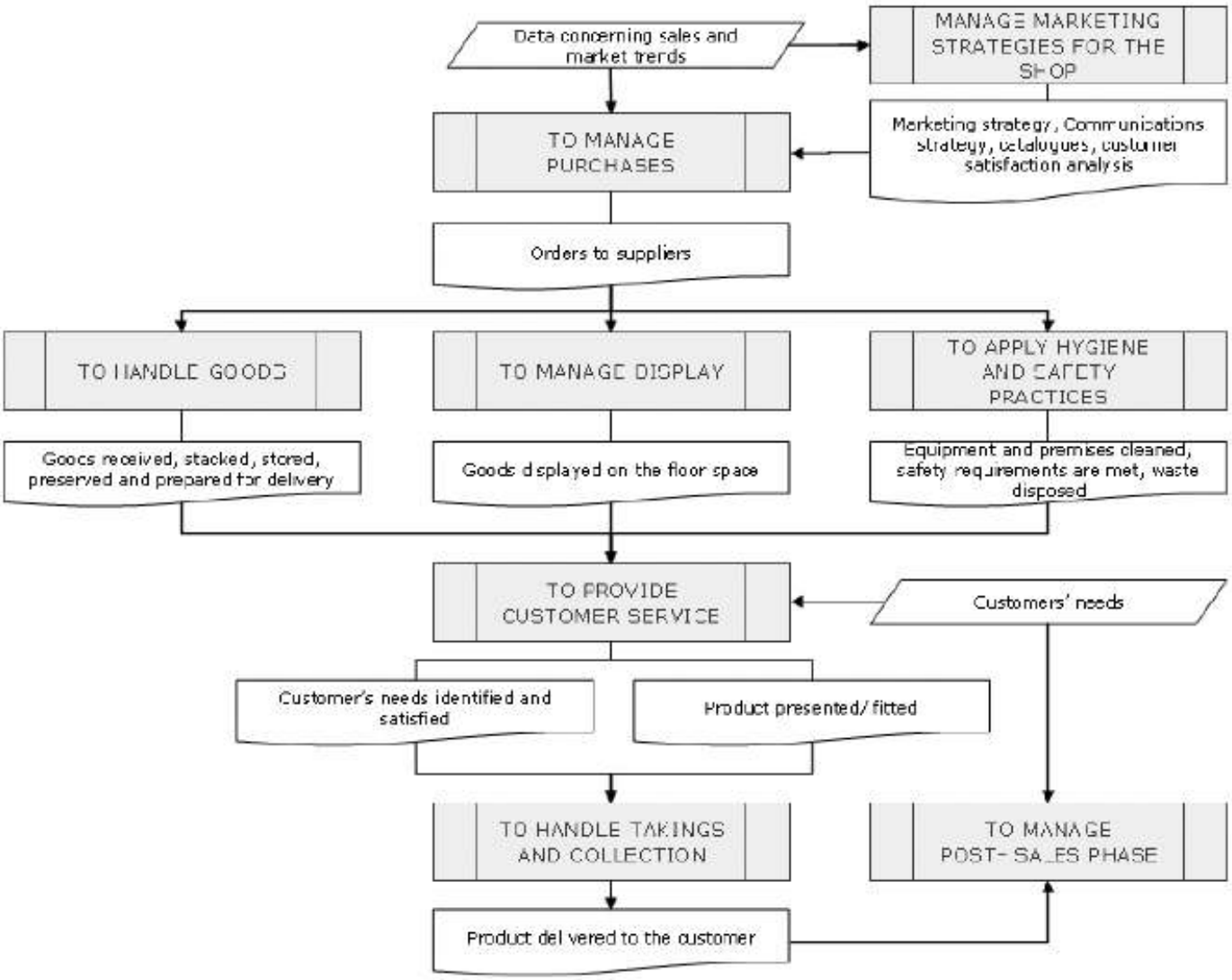

Marketing knowledge transfer

Summary: The article presents the results of the research, whose main aim was determining the way of transferring the marketing knowledge in order to increase the level of competences, knowledge, skills and professional experience. Employees of companies and universities, managers and students were surveyed. The analysis of the literature lead to the conclusion that the knowledge is the key factor in the modern marketing and the effectiveness of every organization is based on the value of human capital. The reports points out that there is a need for the transfer of marketing knowledge both in business and science. Participation in professional trainings, probations and expert advices are the highest rated methods of marketing knowledge transfer.

Key words: knowledge transfer, competences
JEL classification codes: I21, I25.

Introduction

At the end of XX century P. F. Ducker made an opinion that the world's economy has changed. He said that industries, which became the part of the economy in the last forty years focuses more on creating and distributing knowledge and information rather than producing and distributing things.[1] The knowledge is the basis for creating the production, process and services innovations. Thanks to usage of said innovations new selling markets are created and the productivity increases.[2]

The fact the modern economy is propelled by the knowledge seems to be quite obvious both for scientist and businessmen. The base for all operations in the area of developed countries' economy are resources of a new type knowledge. It is said that it is the most important part of production. The business gathers around information and knowledge because they are the main goods which generates wealth and[3] are the main force for creating the economy development.[4] Those two factors always had an important part in entrepreneurship but nowadays the economy development is not possible without those two factors[5].

According to Organization for Economic Co-operation and Development[6] (OECD) investment increase and growing industrial sector in the area of high-teach technology and demand for the highly skilled workforce are the proofs of quick changes which lead to the development of knowledge economy. OECD specialists named three stages, all of them tightly connected with knowledge and information production, distribution and use of knowledge. The key issues are research and development, education and training are important as well. All of this points out how important resource the knowledge is nowadays.[7]

Development of technologies, market liberalization and the change of companies' operation[8] made the search for the effective way of increasing the value of human capital very important. Since the last decade of XX century the dynamic increase of the number of students has been noticed. Young people want to gain higher education fast, because knowledge employee are in high demand. Even though there is more and more of graduates, the position of high educated people on the work market is considerably better. It is said that after graduating from the high school it is easier to find job. In the area of humanities social science and law graduates as well as business specializations are in the highest number, which understandable because of the higher and higher need for the experts in the field of economy and marketing[9].

Because the funds for the education are being cut down, the curriculum of both economists and humanists doesn't include neither probations nor classes in laboratories. The lack of practising skills, which are taught on lectures, makes impossible to develop the competences of the students[10].

Effectiveness of companies' activity and their competitiveness as well as the ability to quickly adapt to ongoing changes in the market environment, is based on the quality of human capital [11]. It can be identified with an unique combination of knowledge, experience and abilities, which are competences of employees.

In order to increase the value of human capital, the quality of education has to be improved. The better it is, the better the universities' graduates are prepared to work both as employees and managers. The lack of preparation to the future work is a serious problem when it comes to develop entrepreneurship. It stands in the way of innovation and competitiveness in business[12].

Knowledge transfer as a method to aid economy education

Improvement of economy educations lies in the area of interest of students, enterprises' employees and entrepreneurs. The author carried out research, whose main aim was to find out what is the most efficient method to pass on economy knowledge.

The participants of II International conference INOO3city, held in Gdańsk on 27th October 2011, took part in the survey. The conference was organized by the government of Pomorskie Voivodeship as a part of INNopomorze project.[13]

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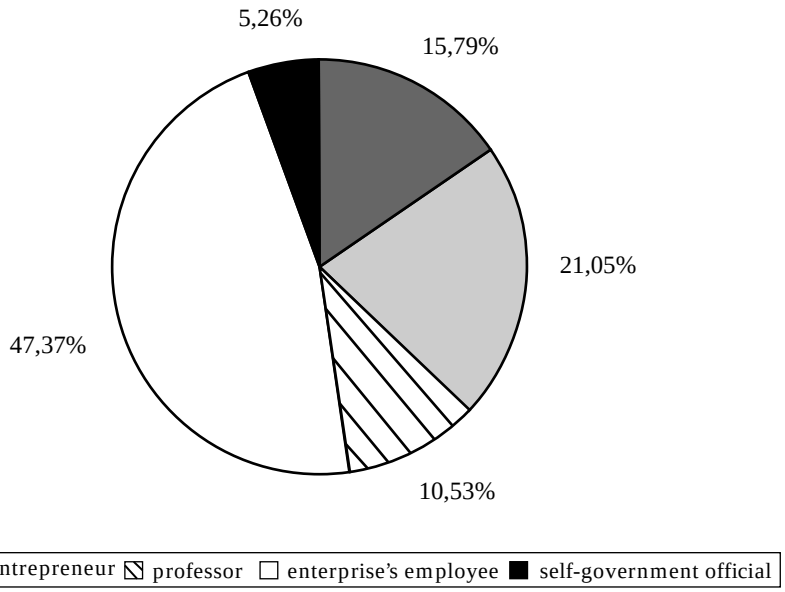
38 people took part in the survey. Among them were the students of economy specializations (15,79%), entrepreneurs (21,05%), universities' professor (10,53%), enterprises' employees (47,3%) and self-government's officials (5,26%). The average age of respondents was 36 years, while 50% didn't exceed 33 years of age (fig. 1).

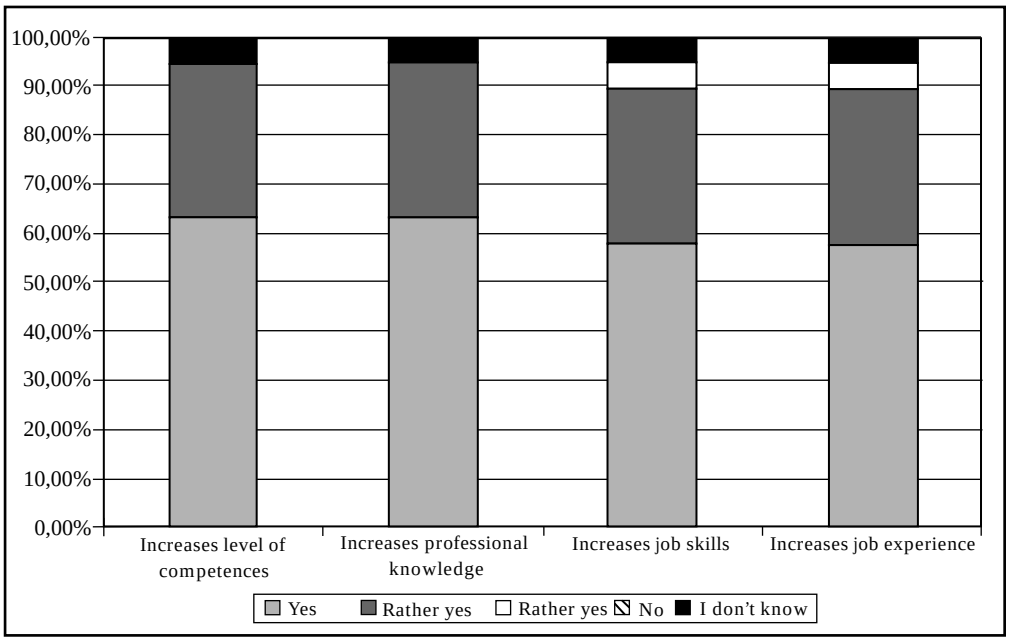
According to the respondents the aid for economy education is possible through the transfer of knowledge. Most of them is positive that the transfer of knowledge can serve well to increase the level of competences and the resource of knowledge, skills and professional experience (fig. 2).

Figure 1. Respondents by groups



Source: own, based on research

Figure 2. What gives us knowledge transfer respondents' opinion



Source: own, based on research

In order to find out which methods would be the best to achieve the aims of knowledge transfer presented above, the following options were given to the respondents:

- participating in training sessions
- participating in conferences
- professional consultations
- post-diploma studies
- probation
- participating in advisor seminar
- e-learning

Except for this, respondents could propose other methods to transfer the knowledge, but no one did so.

The respondents were ask to order the methods of knowledge transfer starting from the most important.

It was decided that in order to improve the level of professional competences, the practise is the most important (fig. 3).

In order to improve job skills the respondents would preferably use professional consultations (fig. 4).

Figure 3. Knowledge transfer methods serving as a way to improve the professional competences, selected in order from the most to the less important

Order	Competences
1	probation
2	participating in training session
3	Professional consultations
4	post-diploma studiem
5	advisor seminar
6	participating in conferences
7	e-learning

Source: own, based on research

Figure 4. Knowledge transfer methods serving as way to increase professional knowledge selected in order from the most to the less important

Order	Knowledge
1	Professional consultations
2	probation
3	post-diploma studiem
4	participating in training session
5	advisor seminar
6	participating in conferences
7	e-learning

Source: own, based on research

According to the respondents the most important for improving work skills is to be on probation (fig. 5).

The respondents believe that to do a probation is also the best way to gain job experience (fig. 6).

Figure 5. Knowledge transfer methods serving as way to increase job skills selected in order from the most to the less important

Order	Skills
1	probation
2	professional consultations
3	participating in training session
4	advisor seminar
5	post-diploma studiem
6	participating in conferences
7	e-learning

Source: own, based on research

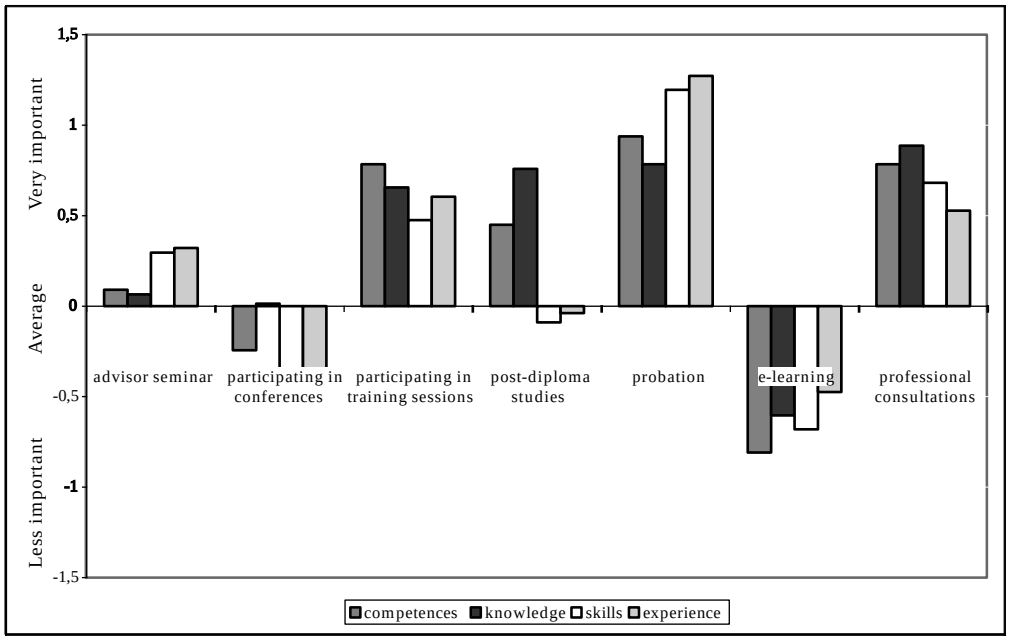
Figure 6. Knowledge transfer methods serving as way to increase job experience selected in order from the most to the less important

Order	EXPERIENCE
1	probation
2	participating in training session
3	professional consultations
4	advisor seminar
5	post-diploma studiem
6	participating in conferences
7	e-learning

Source: own, based on research

The opinions of the importance of the different economy knowledge transfer were presented on the figure 7.

Figure 7. The importance of different methods of knowledge transfer



Source: own, based on research

between economy organizations. Because of that it is hard to estimate if the operations described by models of knowledge management, connected with acquiring, passing on, gaining and sharing knowledge, may be useful in supporting the management education.

We all are witnesses of epoch-making evolution, which marks the change from industrial era to information era [14]. It is clear that "the knowledge is used for knowledge" and economy is dominated by *information capital*[15]. The changes, which take place in economic and social surrounding, need the development of knowledge resources. It is essential, while transferring economic knowledge, to make it fit to participants' expectations and the aim, one wants to gain. Therefore, taking into consideration the opinions of those, who are concerned, seems to be a step forward towards an effective planning of passing on economic knowledge.

The analysis of date provided by the research allows to make a statement that probation, participation in training sessions and professional consultations are highly valued, no matter if the aim is to increase the level of competences, knowledge, skills or job experience.

According to the respondents post-diploma studies have an important role as a way to develop competences and knowledge, but are not as much valued for gaining skills and experiences. The respondents pointed out that those two latest can be achieved during probation.

An interesting fact is that respondents didn't rank e-learning too high, despite popularity of the Internet. No matter what the aim of knowledge transfer was, e-larning was put on the very last place as a method for passing on information.

Knowledge transfer allows to prepare students and graduates to the expectations of job market. It provides economic organizations' employees a chance to develop their skills and gives employers knowledge, necessary for efficient functioning in business environment. To do so, the form of it has to chosen appropriately, to fulfil the expectations of participants and guarantee gaining the aim. Only then the transfer of economy knowledge can secure increasing people's ability to do work.

Conclusion

The concept of managing the knowledge pays a lot of attention to the systems of knowledge flow. They presents the methods of transformation and exchanging knowledge, which takes place in and

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Figures

NOTES

NOTES

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