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Transfer Wiedzy

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Greening the economy
Modern technologies
Sustainable transport paradigm

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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.

Rektor
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Myrrh, incense and transfer of knowledge

Petra, a town carved out in rocks, rose thanks to an impressive ability of its inhabitants to use the knowledge of the entire ancient world at that time. It lasted due to co-operation and avoiding wars. It had not been conquered by Marcus Emilius Scarus, Herod the Great, Cleopatra and Octavian Augustus. Trajan awarded the settlement the rights of a Roman town, with all the privileges. The European Union has been established, when pan-European ideals were transformed and given administrative shape. It was resolved to transform an area of local conflicts into an oasis of co-operation.

Nabateans populated Petra in about 4th Cent. B.C., five centuries after these areas had first been settled by hunters. The city drew its affluence from trade, notably in incense and myrrh, silver and gold, copper and ivory, gems and spices. It is claimed, that the incense trade route was established in the 5th Cent. B.C., which is earlier than the Silk Road leading from China to Europe and the Amber Route leading from the nowadays Gdańsk region to Venice. The Incense Route, spanning about 3500 km, led from the ancient town of Khofar, through Medina and Petra, To Alexandria, Damascus and Rome. Its rise was posiible thanks to the knowledge of the sailors of the Arabian Sea, about the monsoon winds and the ports in India and Africa, where one could acquire myrrh, incense tree, cinnamon and pepper, precious gems and silk, works of silver and gold. Those products were sought after by the courts and citizens of Alexandria and Rome, Athenes and Anthala, and the whole ancient world. Persians, Aegyptians, Athenians, Romans used up tonnes of incense, and the ancient beauties needed scented oils, of which myrrh was the chief ingredient.

A developing town required new architectural solutions. Nabateans reached for the knowledge of the Aegyptian, Syrian, Greek and Roman architects. This way for over six centuries (from the 3th Cent. B.C. to the 3th Cent. A.D.) a transfer of knowledge occurred at a scale, which was global for the ancient world. The organisation of the city-state and its culture changed. The building of simple houses was accompanied by the building of road and water infrastructure, and of monumental buildings carved in stone, with a theatre capable of seating 5 to 8 thousand spectators. In this period a great dam was erected to protect the city from winter flash-floods. A few hundred cisterns were fashioned in rock, from which water flew down and up a network of water conduits to rock homes and the king's palace. The royal residence was furnished with bathing tubs and a small pool, and also floor heated with hot air and a toilet with running water. Buildings preserved in good condition include: Khazneh (El Khazneh Faraoun) a storeyed "Pharao treasure-house" carved in rock"; Deir, or a "monastery"; Kasr al Bint Faraoun, known as the Pharao's Daughter Palace, and the great complex of royal tombs. Majority of buildings was raised with public money, which testifies to the power of intellect and organisational and commercial talent of the inhabitants of Petra.

Today's European Union still has problems creating the uniform economic, monetary and knowledge area. The Lisbon Strategy had become a great disaster, before its implementation period even elapsed. The European Union has become a union of two velocities and an economic area torn apart by crises. The Western Europe turned out to be the weakest in the Euro-zone at the area, where it ought to be strong and most consolidated. The monetary union has led to fractures in the monolyth, which, though weakened, survived the 2009 financial crisis. The United States have quickly shaken down the financial and market crisis, and the European Union is still drowning in bureaucracy, and the rope of social obligations is tightening around the necks of many governmental budgets. Scattered and ineffective financing of science and innovation has contributed to the fact, that Europe's economic distance to the USA is now 20-30 years, as calculated by the European Union of Chambers of Trade and Commerce.

Greatest defeats are suffered by the European Union in the transfer of knowledge between science and economy, and in the product innovations. In 2011, in the United States about 360 thousand new developments received patents, in Japan 320 thousand, in China 280 thousand. These records show, that China Has ceased to be a duplicating economy, and have moved to a state of creating economy as maintained by David J. Kappos, the Director of the US Patent and Trademark Office. For comparison, that year German companies received 13,5 thousand European patents, French ones 4,8 thousand, Italian 2,3 thousand.

The European Union wishes to overcome its innovative inability by introducing the uniform European patent protection. According to some, such solution will strengthen the EU economy, according to others it is like repeating the ACTA in the world of industry and commerce. The new solution may turn out to be especially unfavourable to economically weaker countries. Europe of two velocities will be transferred into the area of patents and innovation. The solution intended to improve the transfer of knowledge and innovation, may lead to a new knowledge blockade and its accumulation in great consortia. Knowledge will be hedged by the stronger and slip out of the control of states and societies as was the case with myrrh and incense in ancient times.

Maybe the time of corporate collaboration has passed, and the time of global collaboration of micro-entrepreneurs is coming? In their newest book, „Macrowikinomics", Don Tapscott i Anthony D. Williams persuade us to "reset" conventional thinking and to tap into the power of collective innovativeness. If the European Union wants to realise the strategic goals of the Lisbon Strategy, it should refer to the power of collaboration, and not to particular interests of chosen countries or spheres. Equally recently another book has reached the market: „The Wonderful Future That Never Was: Flying Cars, Mail Delivery by Parachute, and Other Predictions from the Past (Popular Mechanics)", published in the United States. Let us hope, that the next issue of that volume does not include the European Union among its unfulfilled ideas.

Marek Grzybowski
Editor-in-Chief

Greening the economy – theory and practice in European Union

Ecologisation (so called greening) of the world economy began in the middle of the XX century. Problems linked to the use and degradation of environment have started to be addressed by many scientists. Earlier neglected, such questions like climate changes, running short of natural resources' supplies (including fuels), environment's pollution and its negative influence on human health are nowadays one of the most important ones.

In 1972, during the Stockholm conference, the word eco-development was used for the first time and means economic development fulfilling environment protection's requirements. 3 years later, in Nairobi, eco-development was transformed into *sustainable development*.[1] In 1987 sustainable development was defined (by Brundtland Comission) as development that "meets the needs of the present generation without compromising the ability of future generations to meet their needs[2]". The most popular model of sustainable developments includes three dimensions (known also as capitals, elements, domains or orders): economy, social and environment (figure 1) are equal, so none of them can be treated as superior.

Social dimension (capital) includes all elements related to social equity, strictly: intra- and intergenerational justice, and fulfilling the human needs. Economic dimension relates to economic growth and development (also united with meeting of needs) and environmental one with nature protection and conservation, including preservation of the bio-diversity.[3]

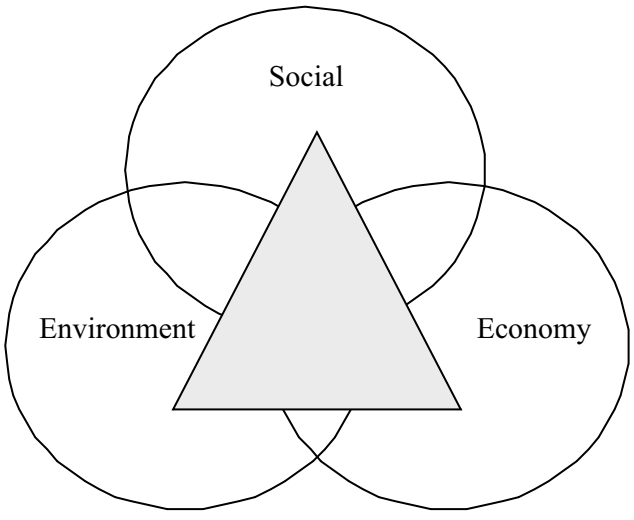
Another idea, also commonly used in the literature, is sustainability some authors treat sustainability and sustainable development as substitutes. In fact sustainability means a relationship between human economic systems and global ecological system, where following conditions are applied[4]:

1) human cultures can develop continually,
2) the life quality may improve,
3) human actions and activities do not effect negatively ecological life support system.

Like in the case of the sustainable development, sustainability emphasises three areas: ecosystems (environment), social (culture and the welfare) and economic (activities leading to fulfil human needs). It seems as it both ideas can be used interchangeably.

The sustainable development's conception has spilled over from social sciences into the common life, it has been considered in Keynes' and neo-classical economics and built foundation for two new ideas: environmental and ecological economics. In these two last disciplines, the ecological economics presents broader approach to the problem of

Figure 1. Basic model of the sustainable development (the three pillas model)



Source: Keiner M., Re-emphasizing sustainable development the concept of 'evolutionability', Environment, Development and Sustainability, No 6/2004, p. 381.

[1] Madej T., Zrównoważony i trwały rozwój społeczno-gospodarczy, [in:] Madej T. (ed.), Gospodarka a środowisko przyrodnicze, WN US, Szczecin 2002, p. 116-118.
[2] Keiner M., Re-emphasing sustainable development the concept of 'evolutionability', [in:] Environment, Development and Sustainability, No 6/2004, p379-380.
[3] Ibidem, p. 380.
[4] Costanza R., Daly, H.E., Bartholomew J.A., Goals, agenda and policy recommendations for ecological economics, [in:] Costanza R. (ed.), Ecological economics. The science and management of sustainability, Columbia University Press, New York 1991, p.. 8-9.

environmental use and conservation.

Environmental economics, based on neo-classical economics, explores the questions derived from exploration and use of natural resources, costs and benefits analysis, long-term effects of environment quality improving, environment-economy systems' modelling and external costs. In this theory the microeconomic point of view is included and some of its fundamental principles are: effectiveness at microeconomic level and measurability of all environmental goods and elements.[5]

The ecological economic approach is related to Keynes' theory and post-Keynes economics and represents macroeconomic point of view. According to this school, all environmental problems should be solved by government and authorities at different levels. The ecological economic approach is more holistic in its nature and easily relates to other scientific disciplines such as sociology, philosophy, or ethics.[6] There is also a broader relationship between economics and ecology. According to ecological economics assumptions[7]:

1) human knowledge, technology, innovativeness and preferences should co-evolve to include ecological aspects,

2) research ought to be focused on longtime frame and not only on a local, but also on a global scale,

3) interconnections between human and ecosystems are important; in this situation human is not in the middle of the global ecological system but is one of many elements,

4) primary goals are: ecological-economic global system sustainability at macroeconomic level and limitation or elimination of the conflicts at microeconomic scale,

5) sceptical approach to the possibility of solving ecological problems by technical progress,

6) evolution concerns both main elements: ecosystems (biological changes) and life principles together with institutions and developing cultures (economic and cultural changes),

7) ecological economics is focused mainly on problems with the aim to solve rather than to concentrate on tools for solution.

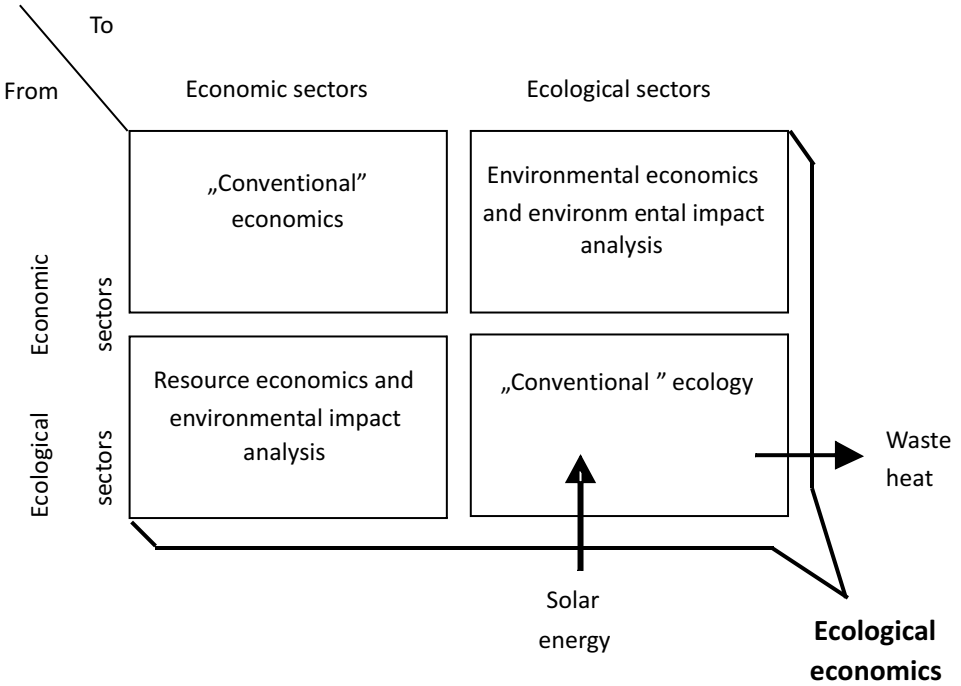
Figure 2 illustrates the concept of ecological economics and its relationship to conventional sciences and ecological economics.

However, nowadays, environment protection and sustainable development seem to be a domain of the developed countries. According to F.J. Ayala-Carcedo "economic growth preceded social development and this in turn preceded ecological sustainability[8]. Therefore, countries may be divided into three groups[9]:

1) the most developed countries, which have gained a lot thanks to their fortunate geographical localisation, the First and Second Industrial Revolution and now are capable of taking care of the environment,

2) fast developing countries now reaching (or planning to reach) a certain welfare state and social services' levels at the cost of the environment,

Figure 2. Relationship of ecological economics and conventional economics and ecology, resource and environmental economics, and environmental impact analysis.



Source: Costanza R., Daly, H.E., Bartholomew J.A., Goals, agenda and policy recommendations for ecological economics, [in:] Costanza R. (Ed.), Ecological economics. The science and management of sustainability, Columbia University Press, New York 1991, p. 4.

[5] Adamkiewicz-Drwiłło H.G., Współczesna metodologia nauk ekonomicznych, Rozdz. 6: Adamkiewicz-Drwiłło H.G., Kruk H., Metodologiczne aspekty gospodarowania środowiskiem przyrodniczym, TNOiK Wyd. Dom Organizatora, Toruń 2008, p. 420-421.
[6] Ibidem, p. 421-422.
[7] Costanza R., Daly, H.E., Bartholomew J.A., op. cit., p. 5-7.
[8] Ayala-Carcedo F.J., González-Barros M.R. Y, Economic underdevelopment and sustainable development in the world: conditioning factors, problems and opportunities, [in:] Environment, Development and Sustainability, No 7/2005, p. 98.
[9] Ibidem, p. 98-104.

3) the rest of the world, trying to achieve proper economic growth level, without troubling the environmental or even social questions (such priorities are always subordinate to economic ones).

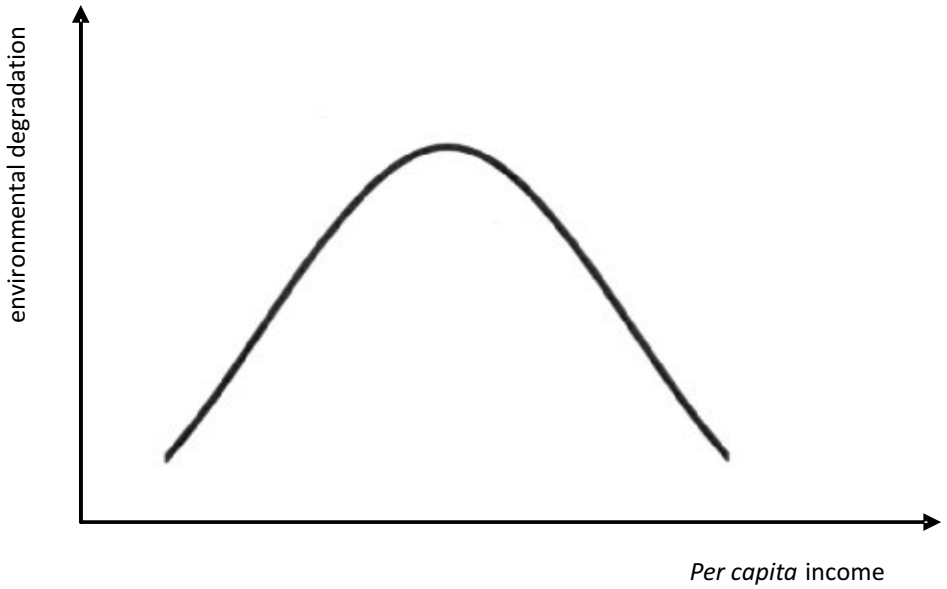
The problem is however more complicated: all these countries use the ecosystem goods and natural resources of Earth, none of them is completely separated from the other. All activities at the local level influence the global state of environment[10].

This idea of sustainable development understood by developed countries may be supported by the so called Kuznet's curve showing the relationship between environmental degradation and economic growth (figure 3). According to that curve model, the higher the level of economic and social development the smaller the environmental pollution[11].

This situation may be modified by a number of different factors. In compliance with one of many explanations, such relationship depends on a radical change in production structure: at the beginning, the percentage of agriculture in global production decreases, and the share of heavy (more polluting) industry grows up instead. In the next period services and light industry have major importance that related to less energy use, limitation of pollution etc. Moreover, in the further phase of economic development, the quality of life improving is linked to the environment state. Consumers and voters exert pressures on producers, local authorities and government to reduce ecosystems' degradation. They also change their own behaviour and life style minimising the environmental impact[12].

In modern approach to the sustainable development, ecological goals often interrelate with social ones (for example quality of life, justice, poverty liquidation etc.) that relates to the idea of competitiveness. Some authors believe that these two ideas are opposed, others try to conciliate them. The competitiveness has been defined several times, at different

Figure 3. The environmental Kuznet's Curve



Source: Borghesi S., Vercelli A., Global sustainability. Social and environmental conditions, Palgrave Macmillan, Hampshire New York 2008, p.17.

levels: micro- (enterprises), meso- (branches of economy or regions) and macroeconomic (countries). For example, according to OECD, competitiveness at a national level is "the degree to which it [nation] can, under free and fair market conditions, produce goods and services which meet the test of international markets, while simultaneously maintaining and expanding the incomes of its people over the long term"[13]. Another definition of competitiveness was provided by a European Commission Report. It relates to the capacity of the business, of the industry, of the region, of the country and of the international level to reach a relatively high level of employment and incomes. In this case, the competitiveness is linked to the GDP per capita in relation to employment rates and labour efficiency[14]. So, there is a direct link between the level of competitiveness, the economic growth and the social welfare.

Some authors promote the idea of the sustainable competitiveness, which depends on resources' configuration, which in turn must be continuously renewed in order to keep its ability to compete[15]. It seems to be a simplification because some resources are not easily renewable, which makes it necessary to use them one in a careful and reasonable way.

[10] Ibidem, p. 99.
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Sustainable development in European Union

European Union (EU) has been aspiring to implementation of sustainable development's rules into economy for years. In 1987, during Maastricht conference, a new chapter (VII) was added to the Treaty of Rome. The chapter was dedicated to environmental questions. It was assumed that main aims of the European Communities included: nature protection, preserving (and improving) the natural resources and values, their rational use and protection of human health[16].

Foundations of EU economy greening have been mentioned in the so-called Lisbon Strategy as well. The strategy was established in order to guide actions improving European competitiveness. According to the document, EU was supposed to be the most competitive, dynamic economy in the world. The principal objective should be achieved by, among others, sustainable development, nature and environment protection. The most necessary actions concerned: modernisation of renewable resources' management systems, restraint of harmful substances' emission, research into new, "clean", renewable energy sources and other environmental technologies. Actions leading to popularisation of the idea of sustainable development were important as well[17]. Such approaches combined questions of competitiveness and sustainability.

The newest European Strategy "Europe 2020" also is related to foundations of sustainable development. It was established in 2010 to replace inefficient Lisbon Strategy. The main principles of "Europe 2020" are: smart growth (concerning improvement of the following issues: education, research and innovations, digital society), inclusive growth (bettering employment rate, modernisation of labour market etc.), economic governance (stability of Euro Zone, improving financial sector and strengthening economic agenda) and sustainable growth. The last one is related to: improving consumer's ecological consciousness, bettering the business' supporting environment and building network at the EU-scale to improve the competitiveness, creating and developing new, "green" technologies, environment protection (including preserving biodiversity and reducing greenhouse gas emissions, sustainable use of natural resources and last, but not least - building a more competitive low-carbon economy[18].

Headline indicators of strategy" Europe 2020", elaborated and published by Eurostat, include many various variables connected with economic, social and environmental aspects of European economy, namely: employment rate (in age group from 20 to 64), percentage of GDP invested in R&D, greenhouse gas emissions, primary energy consumption, share of renewable energy in gross final energy consumption, early school leavers from education (as a percentage of population aged from 18 to 24), tertiary educational attainment (as a share of group of people in the age between 30 and 34) and the number of people at risk of poverty or social exclusion[19]. Strong connection between aims of sustainable development (quality of life, environment protection) and goals of "Europe 2020" is well seen.

Eurostat has been publishing special set of macroeconomic indicators connected with sustainability as well. Sustainable development indicators comprise about 100 indicators, 11 of which are regarded as headline ones, namely: growth rate of real GDP per capita, resource productivity, people at risk of poverty and social exclusion, employment rate in case of older workers, healthy life years and life expectancy at birth (by sex), greenhouse gas emissions and share of renewable energy in gross final energy consumption, energy consumption of transport in relationship to GDP, common bird index, fish catches taken from stocks outside safe biological limits[20] and official development assistance as share of gross national income[21].

Some of the above-mentioned indicators are common for Strategy "Europe 2020" and sustainable development.

The environmental law in EU has been improved continuously. Eco-innovations and some new solutions for environmental protection are strongly supported by EU as well as elaborated and subsequently implemented into practice. Many European enterprises have introduced environmental management system (EMS), their product's quality is confirmed by various eco-certificates. Their care is revealed in Corporate Social Responsibility actions. Actions connected with social participation in decision making and environment protection are more frequent. The number of NGOs' is continuously rising, so is their involvement in solving social and environmental problems.

Hanna Kruk

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[18] http://ec.europa.eu/europe2020/index_en.htm (05.09.2012).
[19] http://epp.eurostat.ec.europa.eu (05.09.2012).
[20] The last two as an indicators of nature protection.
[21] http://epp.eurostat.ec.europa.eu (05.09.2012).

Modern technologies - harmful addiction of the XXI century

The end of the XX century brought about the development of new technologies chiefly aimed at serving a man, increasing life standard and work conditions. They have become so common and omnipresent in everyday life that often, blinded by new solutions, we do not see the "darker" side to these innovations. Some of such improvements of the XX century are prevailing cellular phone technology or computerization, and a little less popular- air conditioning.

Computerization and mobile telephony

Nowadays nobody imagines working or spending time at home without technological back-up- a cellular phone and a computer. They have become so common that there are more and more discussions about dangerous effects of such devices. Rarely does an average user take time to consider the consequences of such obvious actions as, for instance, long time spent in front of a computer screen or talking on the phone. While analyzing the effects of such activities it is necessary to mention the influence of electromagnetic field emitted by monitors and cell phones on human organism.

Fot. Jin Lee New York Stock Exchange, Nowy Jork, USA
Source: http://www.gazetaprawna.pl 2011-04-09

Radiation is becoming so common that one can even hear about so called electromagnetic smog (mixture of overlapping electromagnetic fields). According to the scientists the harmfulness of electromagnetic smog is equal to the total of all other factors causing environment degradation and our own- toxins, chemical substances, noise and stress.
They also claim that in the last half-century electromagnetic smog has been responsible for the majority of so called civilization diseases , increase in number of cancerous diseases or the drop in immunological capacity. The danger is more and more serious as we do not feel these electromagnetic waves when they infiltrate our bodies, we can merely see their final effects.
A man subjected to electromagnetic field endangers their organism in terms of physical and chemical influences, but also physiopathological and biological[1].
Physical and chemical activities are based mainly on the phenomenon of polarization, arousing of particles and increasing their chemical activity, producing radicals or weakening chemical binding. The key role when it comes to human health is played by biological activities which can be divided into thermic and non-thermic.
Thermic effects happen when being exposed to radiation; because of it the part of energy is consumed and converted into heat (which in proper doses may have therapeutic effects). Non-thermic effects are connected, on the other hand, with morphologic changes in tissues and organs. The most fragile for such influence are the neural system cells in which under the influence of electromagnetic field there appear some structural changes and alterations in interneuron bindings.
What is more, electromagnetic field adversely influences the proper functioning of cardiovascular system which can result in slowing down and disturbing heart rhythm or decreasing blood pressure. What is even more dangerous and results in tragic consequences is the mutagenic activity of electromagnetic field, especially in the early stages of development. It causes deregulation of the entire genetic apparatus and compromising reproductive functions.
Bryszewska M. draws attention towards the influence on children's behavior caused by damaging young cells of the central nervous system. It may cause the increase in aggression and problems with remembering. Moreover, electromagnetic field can influence whole spectrum of other areas, for instance:

- disorganization of sleep pattern,
- headache
- inability to focus,
- sight deterioration
- change in blood pressure,
- fatigue not congruent to physical activity (symptom often seen among children and youth),
- changes in morphology (imbalance in the proportions of white and red blood cells),
- changes in hormone balance,
- deregulation of menstruation cycle,
- possibly of increased cases of miscarriages[2].

In the industry, technology and medicine we apply field of high frequency between 3MHz to 300000 MHz[3]. When it comes to protection against electromagnetic radiation the following scale of frequency is applied:

- to 0.1 MHz!
- 0.1 - 30 MHz
- 30 - 300 MHz
- 300 MHz - 300 GHz

The power of biological reaction depends on the length of exposition, the

[1] Terlecki J., Kotarski J. „Wpływ pola elektrycznego i magnetycznego na ustrój" [w] Pilawski A.„Podstawy teoretyczne biofizyki" Wyd. Państwowy Zakład Wydawnictw Lekarskich, W-wa 1991, s. 334
[2] Bryszewska M., Biofizyka dla biologów , PWN, W-wa 1997
[3] Strzesak E. „Wpływ pola elektromagnetycznego na ludzki organizm" www.delta.poznan.pl/news/POLE_E.HTM

age of organism, frequency and amplification of the field. For each of the ranges enlisted above the maximum acceptable ratios were applied and divided into four zones:

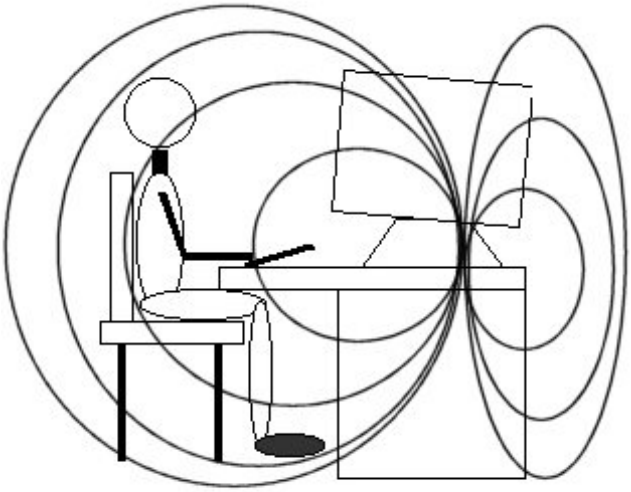
A. Safe field zone, in which long exposition is considered to be harmless - to 1 V/m,

b. Intermediate field zone when being exposed to it a periodic medical check-up is required - 1 - 10 V/m..,

c. Harmful field zone safe to be exposed in a range of time 10 - 1000 V/m...,

d. Dangerous field zone, which it is forbidden to be entered more than 1000 V/m...

Fig. 1. Diagram of electromagnetic waves surrounding a man working on a computer.



Unfortunately the influence of electromagnetic field is subjected to accumulation which is particularly unfavorable for the people having everyday contact with electromagnetic waves. Human body does not have receptors responsible for transmitting information connected with field influence, and, as a result, does not perform any adaptive or protective functions.

After years of scientific research concerning the energy of electromagnetic field and properties of electric tissues, a number of evidence proving harmful effects of electromagnetic radiation has been discovered. Unfortunately, the majority of people assumes that what is not visible is not harmful. They cannot be further from the truth.

Another, more perceptible side effect connected with excessive use of computer, but not directly associated with the influence of electromagnetic field, is faulty posture caused by lasting for hours enforced position while working in front of the monitor. Backache has become standard ailment which few try to fight with- some analogical ailments are of ophthalmological nature: lacrimation, hyperemia or nearsightedness.

However, even more serious in consequences is the addiction to mobile telephony. More and more people cannot imagine their lives without having their cell phones by their side at all times. Currently the number of mobile telephony users is bigger than the number of people living in Poland and one person very often has more than one phone.

Many people consider phones as being indispensable attribute providing them with the feeling of independence and security and determinant of social status which makes people think you have a good job, many professional and private contacts or finally, what is equally important, that you are trendy. It is true not only for people at productive age, but also for more and more children at the pre-school age and elder people. Obviously normally nobody admits they are addicted to mobiles, and not because they do not want to, but because they are not aware of this addiction. The gravity of this addiction is seen only when some life situation forces us to limit our possibility of using the device, for example flat battery or just forgetfulness.

It is clear that the problem is not piffling as the term "phonoholism" is becoming more and more popular. In some way all the users depend on their phones, but what decides about addiction is the quantitative aspect which describes the time which a user devotes to use a device. We can distinguish the following mobile phone addictions:

a. addiction to text messages- characterized by feeling the urge to constant receiving and sending text messages, specific corn on the thumb, advanced wear of the device, conditioning the mood in a given day on the number of messages a person received, sending messages even to oneself (e.g. from a computer) or to people being around.

b. addiction to buying new models which characterizes with acquiring the newest models of mobile phones.

c. mobile phone exhibitionism- characterizes with focusing on visual aspect of the phone when buying a new model, for example color, style and price, showing off its functions and having very loud conversations so that everybody would hear them.

d. players- interested excessively in mobile phone games, the cell phone is becoming a game console and the game is not over until a new record is broken.

All the factors mentioned above causes an addict to gradually loose contact with the people around and reality. A similar problem occurs after spending a few hours in front of the computer.

Another indirect side effect to all behavioral addictions is the lack of interest in recent activities and hobbies, sudden mood swings, turning to addictive stimulants, problems in private and professional life, eating and sleeping disorders and often generating debts caused by too high bills or purchases worth more than financial capacity.

From the report „Young people and mobiles phones" conducted by TNS OBOP as part of the campaign „Attention! Phonoholism" it results that spending entire day without the phone would turn out to be the biggest problem for over one third. Addiction from mobile phones causes the teenagers losing contact with reality.

Air-conditioning

The first time air-conditioning was mentioned was at the beginning of the XX century and it was connected not necessarily with providing comfort to a man, but rather with the necessity to solve a problem which occurred in one of the printing houses in New York. Very high temperatures caused paper to lose its properties and, as a result, prints were becoming blurry and vague. Willis Carrier saved the printing house from bankruptcy by creating first in the world device enabling to control temperature and air humidity in closed spaces. This invention inspired later a cotton mill in South Carolina in order to protect fabric. The young engineer quickly realized that his device had every chance to become a success and with time he extended his offer not only to companies or factories, but mainly to provide comfort to humans in public areas.

Tab. 1. Frequency of use selected functions of mobile phones by teenagers.

	every day or almost daily	several times a week	several times a month	rare	I don't use this function
sending sms/mms	76%	16%	3%	4%	1%
phone conversation	70%	22%	4%	3%	1%
listening to music	65%	18%	5%	6%	6%
make a fotos or movies	17%	30%	27%	18%	8%
surfing the web/chatting	12%	11%	9%	13%	55%

Source: All-Poland research „Young people and mobiles phones" conducted in march 2011 by TNS OBOP on representative group 400 Poles at ages 12-19.

Twenty or thirty years later air-conditioned stores, cinemas or offices have become common.

Nonetheless, not everybody has been convinced that this idea is useful and profitable. Doctors are particularly concerned with negative aspects of air-conditioning chiefly caused by diseases triggered by sudden temperature changes. On the other hand, doctors dealing with bacteriology and viruses have noticed the connection between the air quality (heat, reek) and the number of deaths among the patients treated surgically, especially those with open wounds. Saving human lives has proved air-conditioning to be positive and having more advantages than disadvantages.

In time, as a result of the development of motorization, the possibility to cool the air has become even more needed. It helped to prevent drivers from heatstroke and fainting.

Air-conditioning is not only about reducing the temperature, as it is assumed by most of the people. The other functions are:

- heating (you can enjoy steady temperature for entire year, regardless of the outside conditions, environmentally friendly alternative for traditional heating systems, because it takes advantage of the outside energy and transfers it inside the room.

- cleaning (air-conditioners emit clean and healthy air, the majority of units are equipped with dust and other particulars, bacteria, viruses and unpleasant smells, but also microbes and smoke. It is important to change the filters after expiry date; when they are not changed in the right moment there is a risk that filters saturated with pollution start to emit bacteria to air instead of stopping them; filters are key factors for allergic people.

- drying and humidity regulation- during cooling the air-conditioner dries air providing people with bigger comfort; the right level of humidity limits or stops the increase in pollution and mold which has a positive influence on allergic people; comfort is ensured by the humidity ranged from 35% to 60%; the proper humidity ensures also longer life of the house and appliances.

- ventilation- air-conditioning can have integrated ventilation. Mechanical ventilation is more and more important taking into consideration the way the houses are built nowadays. Providing fresh air prevents the sick building syndrome.

All these factors have enormous and underestimated influence on our health. A man inhales on average 500 liters of air per hour (while performing physical activity it is even eight times more). The quality of air is crucial. Most of our lives we spend in closed spaces- both at home and at work. Often because of bad ventilation or air-conditioning the rooms are overheated and polluted by airborne allergens.

Air-conditioning improves one's mood, augments activity and trim which brings numerous profits, because those who feel good are more creative and productive. There is a close connection between the quality of man's work and the temperature of their direct surrounding. Too hot, too cold or too humid atmosphere for sure does not improve work performance. Scientists proved that work performance starts to deteriorate at around 22°C while at the temperature higher than 26°C our mental performance suddenly drops.

It may seem that after years of testing and improvements of various kinds of air-conditioning devices nobody would doubt in its positive effects. And yet we hear more and more often about mass infections caught at workplace, allergies and even decisions of changing a workplace or company domicile because of air-conditioning. What is the reason of such beliefs?

One of the effects of air-conditioning are draughts. They occur when the power of the devices is faultily adjusted or the entire system is badly designed. The negative effects of exposing the organism to draughts are obvious. State-of-the-art air conditioning as a rule are equipped in special filters which are the barriers for mold and fungi, especially allergic saprophyte of animal or human epidermis and animal hair. Air-conditioning is so indispensable especially to people who suffer from different types of allergies and sensitization.

Unfortunately a big part of air-conditioning devices do not have any filters which makes the effect opposite to the intended. Allergens develop more intensely in proper conditions which are not easily accessible wires and other parts of the device. What is particularly dangerous is the presence of microbes and fungi. Every time the air-

conditioning causes them to spread in the air and that is the most common reason for diagnosed larynx inflammation, cough, skin irritation.

In the newest types of air-conditioners- despite the filters- analogically appear the same problem which is caused mostly by bad or too rare service. There is a reason for Legionellosis (severe disease of respiratory system caused by infection with gram-negative bacteria of Legionella pneumophila) being called the disease of dirty installations. According to WHO the number of deaths caused by Legionellosis is estimated between 20 to 100 thousand people per year!

Another negative effect of being in an air-conditioned room (drying air) is skin dryness and conjunctivitis. The reason for that is oscillating around zero air humidity in intensively air-conditioned rooms. According to theoretical assumptions air-conditioning should moisturize the air, however in practice, to avoid the development of harmful microbes, it has to reduce the humidity. It is impossible to achieve such level of humidity which would be beneficial for a human being and at the same time would protect them from microbe development. It is the factors which causes problems with skin or so called dry eye syndrome.

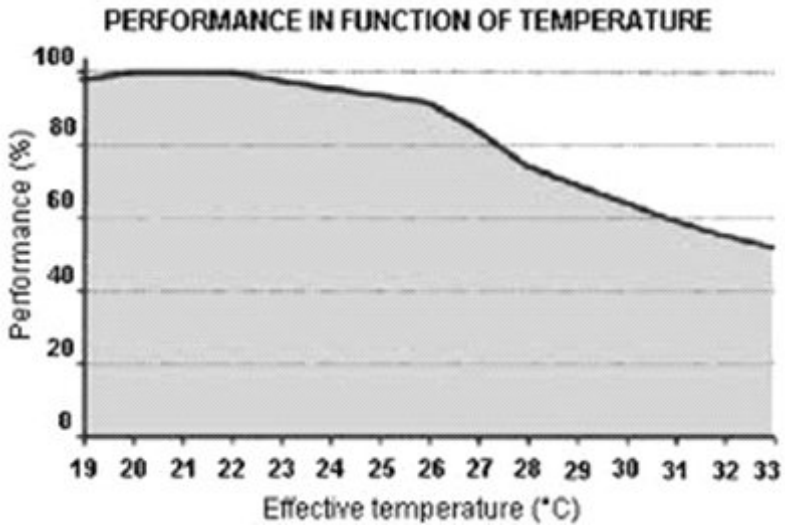
It is particularly harmful to be in the air-conditioned room during summer. Human organism is sensitive to temperature changes as little as 2°C. During summer heat this difference is a couple of times higher which can directly lead to catching a cold or laryngological problems.

Naturally it all depends on individual predispositions and organism immunity, but it is still worth to consider the reasons behind our dermatological, laryngological and ophthalmological ailments is not being in air-conditioned rooms.

Doubtless it is a good idea to take advantage of all innovations and technological or scientific developments which are provided to us in the XXI century. Nonetheless, we should not forget to do it with reason and common sense. It would help to preserve good health and, most of all, proper psychosocial functioning in the aspects of human interaction.

Izabela Straczewska

Fig 2. Temperature influence on man's work performance.



Source:www.daikin.pl/binaries/personal%20performance%20graph_tcm43-1413.gif [30.05.2012]

The issuance of sukuks as an innovative form of company financing. Legal and financial issues examples from Islamic countries as a model for Poland.

Innovative way of European companies financing can be issuance of Islamic financial instruments. Islamic financial instruments are in use in many Islamic countries and western countries. Character of this publication let us describe and introduce only sukuks, as one of the most popular financial instruments in Islamic financial markets.

Today, bonds and other financial instruments are a main category of financial instruments used by private and public entities, particularly state and territorial administrative units of different countries. Answers to the question why countries and private entities so heavily rely and depend on bonds and other debt instruments to be found not only in the natural origin of debt instruments, but also in the origin of securities in general. Transferability of securities, medieval obstacles of lending, the storing and transferring problems of treasures, the transfer of property and rights - all together presents the reasons for the creation and use of bonds and other debt instruments, so by their issuers and buyers.

Debt instruments are used throughout the world. The central question is to answer the question whether the debt securities are based on a uniform legal structure and to determine their common characteristics (features). Well-known classic western countries debt is a bond. A bond is a security issued in series, in which the issuer concludes that it is indebted to the buyer of the bond (bondholder), and is committed to him to fulfill the benefits that can be both in cash and non-monetary. Frequently in the legal construction of these securities we have a financial benefit (monetary obligation), consisting of the interest payment within a specified period time. This model is not applicable in Islamic financial instruments, because it doesn't meet the requirements of the sharia law (Arabic شريعة) . Currently the market for these instruments is growing rapidly.

According to the evaluation of the Ministry of Finance of the UK in 2007 the market of securities which have been issued under Sharia law, was about 250 billion U.S. dollars. In assessing this market should be added that there is a unanimous opinion that the market of Islamic finance has a special place among the other financial markets and still continuously develops about 15% growth per annum. In the area of Islamic finance market in order to obtain funds are acting not only sovereign states and national institutes but also private companies from the United States, Europe and Asia[4].

Dates on development of Islamic financial industry are obviously impressive. It also explains way a lot of the western banks, biggest law offices and consulting firms opened and still opening their own special departments on Islamic financial instruments and markets. We can predict that those markets are still growing and also borrowers and lenders need legal and other financial services. Above mentioned dates, especially the rapid growth of the Islamic financial market, also let us to make the question if the model of the Islamic financial market and their financial instruments can be the ground for the model of future global financial market[5] and the remedium for global economy.

Nature of this publication allows us to characterize only one Islamic financial instrument, which is sukuk. Quite new nature of chosen instrument (it is considered that the development of sukuk market begins in 1998) makes a challenge for lawyers in the presentation of its

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[1] Sharia (Arabic: شريعة Šarīʿa; [ʃaˈriːɑ], "way" or "path") refers to the sacred law of Islam. All Muslims believe Sharia is God's law, but they have differences between themselves as to exactly wha entails[1]. Modernists, traditionalists and fundamentalists all hold different views of Sharia, as do adherents to different schools of Islamic thought and scholarship. Different countries and cultures have varying interpretations of Sharia, as well.
All Sharia is derived from two primary sources, the divine revelations set forth in the Qur'an, and the sayings and example set by the Prophet Muhammadin the Sunnah. Fiqh, or "jurisprudence," interprets and extends the application of Sharia to questions not directly addressed in the primary sources, by including secondary sources. These secondary sources usually include the consensus of the religious scholars embodied in ijma, and analogy from the Quran and Sunnah through qiyas. Shia jurists replace qiyas analogy with 'aql, or "reason". Where it enjoys official status, Sharia is applied by Islamic judges, or qadis. Sharia deals with many topics addressed by secular law, including crime, politics and economics, as well as personal matters such assexuality, hygiene, diet, prayer, and fasting see also M. H. Kamali, Shari'ah Law: An Introduction, Oxford 2008, p. 14 – 19.

[2] See more about market development. Author points that Islamic finances only complements whole financial market – that we can't tell about any substitution of regular financial instruments, Grassa, Rihab and Gazdar, Kaouthar, The Determinants of the Development of the Sukuk Market in GCC Countries (September 13, 2012). Paper presented in the International Conference On Islamic Capital Markets, Bapepam-LK and IRTI – IDB, June 2012, Indonesia . Available at SSRN: http://ssrn.com/abstract=2145934 [last visited: 5.11.2012]; zob. także P. Nowak, Sukuk – alternatywne źródło pozyskiwania kapitału, Master of Business Admistration 5/2010, Akademia Leona Kozmińskiego, s. 46-60.

[3] See J. Karwowski, Finanse islamskie a kryzys, Finanse 2009 – Teoria i praktyka. Bankowość, Zeszyty Naukowe nr 548, Uniwersytet Szczeciński, Szczecin 2009, p. 38 – 45; see also description of the size of Islamic Finance in H. Visser, Islamic Finance, Principles and Practice, Edward Elgar Publishing 2009, p. ix – xi.; see forecast for 2012 in KFH expects global Sukuk issuance to surpass USD 200 bln in 2012, soruce: http://www.zawya.com/sukuk/story.cfm/sidKUN0059120117152937/KFH_expects_global_Sukuk_issuance_to_surpass_USD_200_bln_in_2012 [last visit: 12.12.2011].

[4] See dates on value of some securities issues in Jobst, Andreas A., The Economics of Islamic Finance and Securitization, p. 3-5, available at SSRN: http://ssrn.com/abstract=970682 [last visited: 8.05.2010]; see also Jobst, Andreas A., Kunzel, Peter, Mills, Paul S. and Sy, Amadou N. R., Islamic Bond Issuance - What Sovereign Debt Managers Need to Know (July 1, 2008). International Journal of Islamic and Middle Eastern Finance and Management, Vol. 1, No. 4, p. 3 - 9, 2008; Islamic Law and Law of the Muslim World Paper No. 09-63. Available at SSRN: http://ssrn.com/abstract=1357371 [last visited: 8.05.2010]; see also size of Islamic financial market in Malaysia in Krasicka, Olga and Nowak, Sylwia Barbara, What's in it for Me? A Primer on Differences between Islamic and Conventional Finance in Malaysia (June 2012). IMF Working Paper No. 12/151. Available at SSRN: http://ssrn.com/abstract=2127042.

[5] See more in the context of banking sector in T. Nieborak, Bankowość islamska – przyszłość finansów islamskich? s. 381 – 393 [w:] pod red. A. Janc, Bankowość a kryzys na rynkach finansowych, Poznań 2010.

legal structure. We should be aware that by the meaning of Islamic instruments we do have also other financial instruments.

Sukuks (Arabic - صكوك, comes from the plural word صك "Sakk," which means - a legal document, file, certificate, check) are tradable securities without interest with the features similar to conventional debt securities, mostly equivalent of bonds. The name "Sukuks" is often translated into foreign languages as Islamic bonds, or certificates. The important difference from traditional debt securities is that the income of the investor [the lender] is the proportion of the income of the issuer, which he transfers to the investor [the lender]. In functional meaning, essentially the mechanism for the transfer of income consists of the acquisition of assets for funds raised from the issue of sukuks and then transfer part of the revenues generated by the acquired assets. Sukuks are secured by assets and often represent the ownership of real state property. Interest in Islamic law is not allowed, so sukuks are the securities which are issued in accordance with the principles of Sharia law. Generating profits is permitted by the exercise of real economic activity; it means that is not allowed to generate any money only by financial operations without real commercial activity.

The main feature of Islamic financial instruments is that they are based on a system of contracts, arranged in a formal sequence, but implemented almost simultaneously. According to the provisions of contracts there will be no any loan of money or interest payments, but are admitted regular payments of income.

The legal structure of various Islamic financial instruments is not the same in the context of one named instrument. As the example the specific legal structure of sukuks depends on regulations of individual countries, which can play the role of place of trade and the place of issuance. It should be noted that differences in practice and already new formulated legal doctrine exist, that crates another obstacles in their characteristic. An example of inconsistency in the individual characteristics of Islamic bonds is their ability to be tradable in the light of Sharia law, which is different for different types of sukuks in different countries. There are also individual voices in defining these financial instruments to be controversial because they are regarded as a way to avoid interest on borrowed funds (the prohibition of riba). Certain suggestions and standards in this regard have already been outlined by the Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI).

In practice sukuks because of their internal legal structure and conditions of issuance could be divided into several categories. All presented classifications are open and continuously are changing as a result of sukuk development.

Possible is division based on the purpose of acquired funds through the issue of sukuks: project-specific sukuk, asset-specific sukuk and balance sheet-specific sukuk.

The definitions of *sukuks* made by Accounting and Auditing Organisation for Islamic Financial Institutions (AAOIFI): Certificates of equal value representing after closing subscription, receipt of the value of the certificates and putting it to use as planned, common title to shares and rights in tangible assets, usufructs and services, or equity of a given project or equity of a special investment activity. More simple definition and short description is presented by by Shariq Nisar, - sukuk in general may be understood as a shariah compliant 'Bond'. In its simplest form sukuk represents ownership of an asset or its usufruct. The claim embodied in sukuk is not simply a claim to cash flow but an ownership claim[10].

In the beginning the legal structure of sukuks was more similar to the well-known in the western countries - checks. Sukuks has been identified with any contract for the transfer of rights, obligations, or funds that have been acquired in accordance with Sharia law. By contrast modern legal architecture of Islamic securities is similar to the well-known process of securitization. Simple description of securitization process is the replacement of any assets with securities. Securitization process in the legal structure of Islamic bonds is a compulsory element, whether in most other financial mechanisms it is usually additional component. The ability of the individual tradable securities depends on whether the security by itself is a value of property. Absence of interest in the construction of Islamic bonds, they are secured with some assets that in some way automatically create the ability to be liquid at the primary and secondary capital market[11].

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In practice sukuks because of their internal legal structure and conditions of issuance could be divided into several categories. All presented classifications are open and continuously are changing as a result of sukuk development.

AAOIFI identified about fourteen types of sukuk. But if will count all possible modifications and hybrids of existing sukuk list could be much longer. For example as type of sukuk we can extract some very popular kinds of sukuk. Ljara sukuk - the essence of which is to represent the ownership of assets - real state. Holders of sukuk get the right to receive the rent and other possible revenues connected generated by real state. This type of financial instrument may be subject of trading in the secondary market at market prices. Type mudaraba sukuk is investment financial instrument that represent ownership of units of equal value in the SPV (special purpose vehicle mudaraba equity) and are registered in the names of holders on the basis of undivided ownership of shares in the mudaraba equity and its returns according to the percentage of ownership of share. Simply investors lend funds for the project realization and instead of lend funds receive sukuk, which are issued by SPV. In common language it is also could be described that lenders and borrowers together form the company (SPV; joint venture). When in the known mechanisms of financing projects, the creation of the SPV is often of secondary importance, but creation of SPV in the legal structure mudaraba sukuk is mandatory. Finally investors (holders of sukuks) will receive a share of profits from the project financed from the issue of sukuk according to the terms of sukuk issuance. Next financial instrument -

[6] Further in this publication is used interchangeably sukuks, Islamic securities, Islamic bonds or Islamic certificates.
[7] Riba (Arabic: الربا, IPA: [ɾibæ:]) means usury and is generally forbidden in Islamic economic jurisprudence fiqh. There are two types of riba discussed by Islamic jurists: that prohibited by the Qur'an (an increase in capital without any services provided), and that prohibited in the Sunnah (comprising commodity exchanges in unequal quantities). see also T. Abdulkader, Interest in Islamic Economics, London and New York 2006.
[8] See H. Visser, Islamic Finance, Priciples and Practice, Edward Elgar Publishing 2009, p. 63 – 64; see abou similirities of bonds and sukuks in Ariff, Mohamed and Safari, Meysam, Are Sukuk Securities the Same as Conventional Bonds? (2012). Afro Eurasian Studies, Vol. 1, Issue 1, Spring 2012, 101-125. Available at SSRN: http://ssrn.com/abstract=2117616 [last visited: 10.10.2012].
[9] The Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI), see more information on official website: www.aaoifi.com [last visited: 8.05.2010].
[10] See more S. Nisar, Islamic bonds (sukuk): its introduction and application, source: http://www.financeinislam.com/article/8/1/546 [last visited: 8.05.2010].
[11] See. S. Archer, R.A.A. Karim, Islamic Finance: The Regulatory Challenge, Wiley 2007, p. 264 – 266; see also Т. Г. Черниенко, Кризис мировых фондовых рынков через призму и. сламской экономики, IslamRF.ru 29.01.2009, źródło: http://islamrf.ru/news/analytics/economics/6868/ [last visited: 8.05.2010].

musharaka sukuk - represents the lender's shares in the company (also referred to as representing the interests of business). In many ways this sukuk is similar to mudaraba sukuk. The main difference that in mushara sukuk in SPV is formed the committee of sukuk holders, which is also making investment decisions. A certain part of the capital of this company entity is formed with lender's assets or funds, while the second part of the capital is supplied by investors from funds obtained from the issue of sukuk. Possible gains, losses and expenses are divided under the terms established while forming company and issuing sukuk.

By summarizing all described above types of sukuk we could say that legal structures of them are really so complicated. In the internal legal structure of sukuk we not only find elements of well known bonds, but also we can see some elements of public-private partnerships, project finance, securitization and other financial mechanisms. Theoretically in some way Islamic bonds could be characterized as hybrid securities, which combine some of the characteristic of both debt and equity securities.

In the context of this paper main goal is to find the answer if it is possible to issue another types of treasure securities, not mentioned by the law. Discussion on this topic looks quite old as it was many times presented in the Polish literature as the topic on principle of numerus clausus in securities law. In the doctrine of civil law there are various views on legal validity of the numerus clausus principle in securities law. According to this principle the document may be considered for a security only when the provisions of statute give it nature if security. In other words, when the document is considered and named by law as security.

In our opinion in the context of financial law and scope of this paper numerus clausus principle does not create any obstacle to use another financial instruments for financing private and public units' needs. Restrictive provisions are related with publicly traded securities, and (in lesser extent) the provisions for funding the financial needs of the state. Additional argument is that the term "loan" and "credit" should be described in much broader meaning than is described in civil law.

Summarizing the benefits of Islamic bonds (sukuks) for Polish companies (entrepreneurs) and the public sector it a new possibility of obtaining low-cost financial funds, or the possibility of repackaging the classic securities into sukuks. It is also an additional alternative source of investments for Polish investors.

Other side of the global financial market and global economy is that financial needs and deficits of public and private entities of many western countries already reached their legal limits (or limits described by owners of the companies). The borrowing needs of these entities are still high and they need to use financial instruments which will not generate additional debt as it mostly is present when interests are paid. The question is if it is the chance for states and private entities to use quite complicated Islamic financial instruments without any interest payments, which are also known as less speculative, morally acceptable, closely connected with the market of real goods and care of the profitability of the financed projects.

In the other words benefits of Islamic bonds issuance also could be described that inexpensive funds can be gained by repackaging classic securities (bond issued by private entities) into sukuks. It is a way to be more attractive to investors. Other side of something new in our legal systems means new challenges for lawyers for putting or creating new legal brackets for these financial instruments.

Abstract

This paper covers the general description of modern Islamic financial instrument sukuk, Islamic bond. Last years the role of the so-called Islamic financial institutions and financial instruments on the world market and world economy increased significantly and their future estimated growth rate exceeds 20% per year. Authors make even presumption that perhaps sukuks are the most interesting and important for the world financial market an invention of Islamic financial market. In the light of Polish law and practice should be treated as an innovative form of financing public and private needs.

dr Małgorzata Stwoł
dr Edward Juchniewicz

[12] See more S. Nisar, Islamic bonds (sukuk): its introduction and application, source: http://www.financeinislam.com/article/8/1/546 [last visited: 8.05.2010].
[13] See Statute on public-private partnership [LJ. U.09.19.100].
[14] Project finance is the long term financing of infrastructure and industrial projects based upon the projected cash flows of the project rather than the balance sheets of the project sponsors. Usually, a project financing structure involves a number of equity investors, known as sponsors, as well as a syndicate of banks or other lending institutions that provide loans to the operation. The loans are most commonly non-recourse loans, which are secured by the project assets and paid entirely from project cash flow, rather than from the general assets or creditworthiness of the project sponsors, a decision in part supported by financial modeling.[1] The financing is typically secured by all of the project assets, including the revenue-producing contracts. Project lenders are given a lien on all of these assets, and are able to assume control of a project if the project company has difficulties complying with the loan terms, see more E.R. Yescombe (Author), Principles of Project Finance, Academic Press; 1 edition (June 20, 2002).
[15] Securitization is the financial practice of pooling various types of contractual debt such as residential mortgages, commercial mortgages, auto loans or credit card debt obligations and selling said consolidated debt as bonds, pass-through securities, or Collateralized mortgage obligation (CMOs), to various investors. The principal and interest on the debt, underlying the security, is paid back to the various investors regularly. Securities backed by mortgage receivables are called mortgage-backed securities (MBS), while those backed by other types of receivables are asset-backed securities(ABS).
[16] See more A. Chłopecki, Czy w prawie polskim obowiązuje zasada numerus clausus papierów wartościowych, Przegląd Sądowy 1994, nr 2; P. Michnikowski, Numerus clausus papierów wartościowych inkorporujących wierzytelności, PiP 2000, nr 8; zob. także Przeniesienie praw własności papierów wartościowych w zakresie prawa prywatnego międzynarodowego, Przegląd Ustawodawstwa Gospodarczego 12, Warszawa 2002.
[17] See more about sukuk as financial instrument for budget deficit financing in Boumediene, Aniss, Financing Government Budget Deficit as a Liquidity Risk Mitigation Tool for Islamic Banks: A Dynamic Approach (March 16, 2012). Available at SSRN: http://ssrn.com/abstract=2025127 or http://dx.doi.org/10.2139/ssrn.2025127 [last
[18] See for example article about choises of law in the light if islamic finances in Colon, Julio C., Choice of Law and Islamic Finance (May 31, 2011). Texas International Law Journal, Vol. 46, No. 2, 2011. Available at SSRN: http://ssrn.com/abstract=1856351 [last visited: 11.10.2012].

Criteria of service value assessment

Summary

The article reflects on service value assessment criteria understood as personalized service relationship. Service understood this way in an intentional provision of work by members of a meeting. Meeting members, by treating a man as a subject, not as an object, find sense in their lives through work relationships. In consequence, an enterprise will obtain profit by providing service for the benefit of their stakeholders including their employees, clients, employers, asset holders or society members.

Introduction

The main reason for reflection on the service value assessment criteria has been the latest discussion in scientific articles and economic literature referring to the subject matter. The multiplicity of observed attitudes to solutions in this field has inclined the author to consider if these various criteria of assessment could be met and if so to what extend. The decisive factor in the layout and composition of this article has been the very object of the assessment, namely the notion of service. For the sake of considerations here the concept of service proposed by K. Rogoziński has been adopted. Therefore, the first chapter of the paper deals with the criteria of service value assessment, where service is discussed within the dimension of relationship, the act of service provision; in the second chapter concerns the dimension of a product and its offer on the market and the third one discusses the dimension of services sector in a state economy.

1. CRITERIA of service Relationship Evaluation

Service is an activity performed by one person for the benefit of another, is an intentional provision of work. Quite often service recipients are simultaneously co-authors of a service (pro-sumers, co-producers), performing their work. As a result of given work performed, the needs of both parties are satisfied.

The above statement suggests that work should not necessarily be a profit generating activity; the notion of work comprises all the activities undertaken by parties in the process of exchange. The sequence of interconnected activities results in relationship which in consequence joins members in mutual exchange. At the end of this model process the servicing company is transformed into the community of common interests.

The relationship relies on cooperation. The relationship process in its essence is free from describing its effectiveness and efficiency. For members of a given activity it is the jointly added value which makes significance. What is value? The concept of value contains non-definability in itself. According to M.Scheller recognition of value is performed through emotional acts. Experience of value is prior to its definition, it is the source of its understanding and evaluation. A person may be delighted as the experience of value „speaks to the man" do not leave, let me "be".

Service relationship is the meeting of people, an event, a phenomenon. Meeting as such is the expression of opening services relationships to its members, the relationship based on the intentionality of service provision, as well as the dialogue enabling long-term cooperation among its members.

By accepting the fact of intentionality, namely the awareness of sense of service activity, both on the part of the service receivers as well as the service providers, it is assumed that the mutual „attitude" of meeting members is exchanged, the co-feeling of emotions through the mystery of an event is experienced , of which effect is difficult to foresee or assume. At some stage of such meeting it could be hard to differentiate who is the service provider and who is the receiver in this event.

According to J. Tischner, "a meeting is a moment when we experience our own or someone else's real tragic nature". It results from the fact that the world structure is based on hierarchy, and human thinking relies on preferences. A man free in his choices starts to prioritize, and this leads to a situation "where all scenarios of drama are possible". A meeting member can adopt various attitudes such as

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[1] K. Rogoziński, Usługi rynkowe, Wydawnictwo Akademii Ekonomicznej w Poznaniu, Poznań 2000, p. 44.
[2] K. Rogoziński, op. cit, p. 26, 34.
[3] M. Boguszewicz-Kreft, Zarządzanie doświadczeniem klienta w usługach, Wydawnictwo Uniwersytetu Gdańskiego, Gdańska 2009, p. 231.
[4] Zarządzanie relacjami w usługach, red. K. Rogoziński, Difin, Warszawa 2006, p. 14.
[5] K. Rogoziński, op. cit, p. 43.
[6] Zarządzanie relacjami w usługach, op.cit., p. 25.
[7] J. Galarowicz, Na ścieżkach prawdy. Wprowadzenie do filozofii, Wydawnictwo Naukowe PAT w Krakowie, Kraków 1992, p. 579.
[8] K. Grzywocz, Wartość człowieka, „Zeszyty formacji duchowej",
Jesień 49/2010, p. 19.
[9] Ibidem, p. 13.
[10] J. Bukowski, Zarys filozofii spotkania, Społeczny Instytut Wydawniczy Znak, Kraków 1987, p. 16.
[11] K. Rogoziński, Zarządzanie organizacją usługową próba wypełnienia luki poznawczej [at:] Współczesne zarządzanie, 2007/ 3, p. 8
http://www.uslugi.ue.poznan.pl/file/129_189179007.pdf (the state of affairs on September 30th, 2011).
[12] Zarządzanie relacjami w usługach, op.cit, p. 15.
[13] Ibidem, p. 9.
[14] J. Tischner, Myślenie według wartości, Wydawnictwo Znak, Kraków 2011, p. 527-545.

closing himself to relationships, withdrawing himself or accepting meeting exchange "cultivating life". According to J.Tischner the notion "cultivating life" means „allowing to be" [15]. One necessary condition of such attitude is sacrifice, which according to the philosopher implies crossing the borders of oneself, accepting one's good will, his good will directed towards another man[16]. According to J. Tischner, this opening to agatological (unveiling) ideal yields in consequence the affirmation of human existence and rebellion, which when expressed, stimulates to axiological (projecting) thinking. "Such axiological thinking results in preference of truth over untruth", which in relation to a meeting, consists of endeavours for truth in a dialogue, is equal to the unveiling of face covered by a mask of pretence. The question should be asked here what the possible limits of openness are. W. Chudy warns: "Exaggerated value brings sometimes threat of (…) washout of someone's identity and relativity of truth". Unity which could be but does not necessarily has to be built between the service provider and service receiver should be based on truth, mainly on the truth about man, his nature and his fair obligations[19].

The question is brought to one's mind if and to what extend such sacrifice of people at the service relationship is possible. What could incline two members of exchange to such attitude? Do the XXI century people can afford such heroic nobility which is revealed, as R.Ingarden wrote, in the generosity relying on the assumption that one should be faithful to the values even for the values themselves.

To summarize the above, the first analyzed here dimension related to service understanding deals with the personal aspect of the provision act. In this dimension the criterion of service value assessment focuses on the place of the service in the hierarchy of the meeting members value. The criterion of service value relationship assessment is the fact of accepting/non accepting someone's view on human subjectiveness; the level of transcendence via truth on the nature of man , his dignity and the system of values protecting humans against manipulations caused by individual or collective egocentrism.

The assumption on human subjectivity criteria contradicts with a frequent practice applied in the field of services relying on limitation of activities in the consumption sphere to the ones most satisfying the client and concentrating on obtaining maximum profit. Such attitude leads to the human alienation in the field of consumption and work. A service recipient should experience support in authentic and substantial realization of his personality and therefore an employee should be accompanied with an employer's interest in personal development through work relations. Only then man is treated as a subject, not an object of such act.

2. Criteria of services value assessment relating to stakeholders

None of the companies operate in isolation. Each service organization has its own „electorate" , members of which sense the results of company activities and are interested in its best effects. Generally speaking, any service providing company is responsible before members of three main groups: clients, employees and investors. Stakeholders, as risk carriers, bring their demands to a company, which a company should accept. In other words, companies operate under social pressure, the opinion created by majority. This should not be understood that any claims which are put should be always justified from the moral point of view or as physically executable.

The Davos Manifesto should be treated as guidance reference to subject oriented approach[25]. One of its assumptions is that an organization management's prior aim should be serving its clients, coworkers, capital providers and society as well as to balancing their disputable interests[26]. The notion of serving is used against the opposed term ruling. Serving means bowing, listening to stakeholders, familiarizing with them and being understanding [27]. As a result of such agreement oriented activities, profit may be obtained, which should be viewed as a kind of "prize" for a long term management's orientation towards services aimed in benefit of their stakeholders.

The framed items below refer to the Davos Manifesto assumptions relating to some of the service activity specifics.

1. The management has to serve its clients

It has to satisfy its clients' needs and give them the best value. Competition among companies is the usual and accepted way of

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[15] Ibidem, p. 535.
[16] Compare the examples of such "sacrifice" from the practice of service organizations: S.Covey, 7 nawyków skutecznego działania, Dom Wydawniczy Rebis, Warszawa 2003, p. 139-142 and M. Boguszewicz-Kreft , op. cit., p. 207.
[17] The myth on the Platon's cave can be referred to at this place here.
[18] W. Chudy, Społeczeństwo zakłamane, Oficyna Naukowa, Warszawa 2001, v. 1, p. 58.
[19] Ibidem, p. 61.
[20] J. Tischner, op. cit., p. 49-50.
[21] W. Chudy, op. cit., p. 58-59.
[22] Jan Paweł II, Centesimus Annus, Wydawnictwo Wrocławskiej Księgarni Archidiecezjalnej, Wrocław, 2000, p. 83 (Encyclical, 41). Compare also an interesting list of setting goals influence on the client's experience in various sales categories: M. Boguszewicz-Kreft, op.cit., p. 248.
[23] R. W. Griffin, Podstawy zarządzania organizacjami, Wydawnictwo Naukowe PWN, Warszawa 2002, p. 148, 149.
[24] B. Klimczak, Etyka gospodarcza, Wydawnictwo Akademii Ekonomicznej im. Oskara Langego we Wrocławiu, Wrocław 2006, p. 75-76.
[25] A.Polańska, O modelach w zarządzaniu personelem [at] Zeszyty Naukowe Wyższej Szkoły Administracji i Biznesu w Gdyni, nr 1 1997, 20. http://www.wsaib.pl/files/biblioteka/zasoby_cyfrowe/Zeszyt%20Naukowy2.pdf (the state of affairs on September 30th, 2011).
[26] H. Steinmann, G. Schreyögg, Zarządzanie. Podstawy kierowania przedsiębiorstwem. Koncepcje, funkcje, przykłady, Oficyna Wydawnicza Politechniki Wrocławskiej, Wrocław 1995, p. 75.
[27] It is worth referring to the quote on the mission of an entrepreneur and sensitivity in his activities: „An entrepreneur who keeps but not owns assets and takes a loan, decides to perform work by employing others and by using their ideas which have not been his ideas, and of which he has not have thought but has bought them and on the grounds of all these activities creates a new work or product , transforms his reality drastically creating reality which has not existed before". J. C. das Neves, Ekonomia z Bogiem, Wydawnictwo WAM, Kraków 2003, p. 106.

ensuring that clients receive the best value choice. The management's aim is to translate new ideas and technological progress into commercial products and services.

Point B.1. of the Davos Manifesto

This dimension of service has been referred to clients. Satisfaction of clients' needs is characteristic for marketing oriented attitude. In marketing of services, the attention is being paid to quality of services and clients' satisfaction as the key elements conditioning sustainable relationship, which has significant financial consequences both for an entrepreneur and for a client[30]. In accordance with the rule of whispered marketing , clients will share their service experience with other clients, what in consequence will influence ultimate financial result [31]. Clients, however, will expect to have possibility of sustainable mutual cooperation.

The second part of the Davos Manifesto B.1 point does not correspond to the service activity. The majority of the personalized service relationships is characterized by a low clarity of prices [32] (which results from nonmaterial feature) [33]; versatility of a service, which in consequence results from the lack of divisibility of services production and consumption as well as lack of homogeneity of activities members in the services process, the fact that this kind of services is not susceptible to technical progress, unless it deals with relieving arduousness related to the provision process [34]. However, when referring to innovation, the features such as organization, marketing and process have much greater significance[35]. Due to the fact of co-production (co-creation) of services, clients may want to collaborate with each other hoping to obtain lower costs for a given service.

1. The management has to serve its employees

because in a free society leadership must integrate the interests of those who are led. In particular, the management has to ensure the continuity of employees, the improvement of real income and the humanization of the work place.

Point B.2. of the Davos Manifesto

Although front line employees, who have first contact with a client, are also co-creators of a service, yet the process of service provision as well as its final result depends equally on supporting employees and backstage staff. Therefore, like in any system in which elements jointly contribute to a success of a whole unit, all employees are the coworkers creating final effect, being proceeded by a set process and leading to a certain technical result of the provision system.

In the first place any management should care about stability of an organization by providing and maintaining proper workplaces. An entrepreneur's task is to offer his clients well-being at a decent level. To achieve this goal management of a given organization should start from an accurate recruitment of personnel whose knowledge [36], interpersonal skills and attitude are adequate to the adopted mission and organizational culture, in order to avoid or limit problems of misfit related, for example, to exaggerated suppressing of emotions or moral conflicts[37]. In favourable conditions, an employee is given an opportunity to remain faithful to his professional ethos [38]. Man undertakes his professional work to maintain himself and his family and therefore he deserves decent remuneration for his efforts. Thus information on the company stability, profitability or settling its obligations is so significant for its employees [39]. Man should be perceived as a physical-psychical-spiritual unity and as such he expects from his management to be provided with adequate conditions of work, decent treatment, respect and mannered forms of cooperation [40]. The literature in the field of services marketing (or more widely relational marketing)[41] is primarily focused on satisfying personal relationships among employees[42].

3. The management has to serve its investors

by providing a return on its investments, higher than the return on government bonds. This higher return is necessary to integrate a risk premium into capital costs. The management is the shareholders' trustee.

Point B.3. of the Davos Manifest

Capital providers including investors and loan providers take a considerable amount of risk by offering their capital. Therefore, investors should be provided with fair information on risk, uncertainty related to the investing, return rate of the involved capital, ability of a unit to pay dividends'; the lenders need to be provided with information on the risk related to creditworthiness of a unit, the possibility of repayment of credit together with interests[43].

4.The management has to serve society

It must assume the role of a trustee of the material universe for future generations. It has to use the immaterial and material resources at its disposal in an optimal way. It has to continuously expand the frontiers

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[28] K. Rogoziński indicates the influence of marketing on an existing organization and management, by approaching service activity from the point of view of service recipient (as is opposed to goods oriented approach): K. Rogoziński, Zarządzanie organizacją usługową, op. cit., p. 7.

[29] It is hard to find any study in the scope of marketing services which would not include the issues from the field of services and client's satisfaction. A.Payne, Marketing usług, PWE, Warszawa 1996, p. 223, for example, indicates the central place of quality in marketing services. It was accepted in this article, that the quality of services should be defined as the level of satisfying a client's expectations and is a more objective category, being a general assessment in a longer term, whereas client's satisfaction is a subjective feeling of quality at a specific service meeting. For more detailed considerations on the differences between quality and satisfaction- compare: R. Furtak, Marketing partnerski na rynku usług, PWE, Warszawa 2003, p. 152.

[30] I. Olchowicz, A. Tłaczała, Sprawozdawczość finansowa według krajowych i międzynarodowych standardów, wydanie II, Difin, Warszawa 2009, p. 23-24.

[31] It has been confirmed at least by the indicators related to the problems of maintaining clients , that is the yearly retention indicator, the yearly „desertion" indicator or the average length of a company services used period, for example. Compare: R. Furtak, op. cit., p. 103.

[32] Which may generate information asymmetry and disturbing balance between profit and work expenditure.

[33] H. Simon, Zarządzanie cenami, Wydawnictwo Naukowe PWN, Warszawa 1996, p. 515.

[34] K. Rogoziński, Usługi pod presja technologii, Marketing i Rynek 7/ 2001, p. 15.

[35] A. Tokarz, Zasoby ludzkie jako jeden z czynników determinujących innowacyjność przedsiębiorstw usługowych, Zeszyty Naukowe 145, Wydawnictwo Uniwersytetu Ekonomicznego w Poznaniu, Poznań 2010, p. 169.

[36] It should be stressed here, that if such relationships are not present, they should be supplemented by trainings. The important aspect of this attitude is openness to changes, novelty, readiness for training, the ability to reflect and draw conclusions for the future.

of knowledge in management and technology. It has to guarantee that its enterprise pays appropriate taxes to the community in order to allow the community to fulfill its objectives. The management also has to make its own knowledge and experience available to the community

Point B.4. of the Davos Manifesto

„Investing means giving a society an opportunity to add value to their work"[44] . What is significant for the society is to be made aware of financial standing of a unit and possibility of its sustainable operation , providing possibility of constant employment for staff, supporting local suppliers, developing infrastructure and supplying budgets of local authorities budgets[45]. An important asset to the discussion on combining companies competitiveness with the shape of society is the proposal to create economic and social values simultaneously as in the model proposed by M. E. Porter and M. R. Kramer[46]

Summing up, the conclusion can be drawn from the above statements, that the primary criteria of the services value assessment should be decent well-being offered as service. Measurable and non-measurable elements are significant both for clients and employees. Cooperation in the scope of delivering decent well-being, desired by man, both for himself and for others, may release involvement and passion contributing to satisfaction of clients and their sustainable loyalty. Satisfied clients become ambassadors of a brand, disinterestedly encouraging others to use services of a given organization; as a result of such natural promotion an organization obtains profit from valuable services leading to further satisfaction of its investors. It appears from the above that capital originates from work, and when work is a significant life element and becomes one's passion, man finds sense of his life through work.

3. Macroeconomic criteria of services value assessment

When taking into consideration macroeconomic analysis it should be indicated that the most frequently used value indicators referring to services include: value added gross, a number of people employed in services and a number of economic entities. Referring to the relational services dimension of assessment this analysis is rather of minor significance. It is important, however, for a government and for governmental bodies, from the point of conducting their economic and tax policies towards organizations as well as when preparing statistics referring to macroeconomic categories. However, it should be born in mind that macroeconomic indicators do not present the actual picture of "well-being" in a comprehensive way.

[37] The conflict between loyalty towards a company with the sense of responsibility for its cativities. Compare B. Klimczak, p. 85-100.
[38] B. Klimczak Między ekonomią a etyką, Wydawnictwo Uniwersytetu Ekonomicznego we Wrocławiu, Wrocław 2008, p. 13.
[39] I. Olchowicz, A. Tłaczała, op. cit.
[40] In the results of research quoted by J.L.Hesketta, the values appreciated most by employees include the possibility of meeting customer's needs, job satisfaction, remuneration, fair promotion, treatment with respect and dignity, group work and interest in the employee's situation. M. Boguszewicz-Kreft, op.cit, p. 209.
[41] The ladder of client's loyalty should be referred to: from the ladder's first rung of a prospect, through supporter and advocate (the ambassador of the service brand) A. Payne, op. cit., s. 55.
[42] M. Boguszewicz-Kreft, op. cit., p. 200. The full rank of factors influencing the customer's experience includes: People, product, providing services; place (convenience); product features; price; policy and procedures; promotion.
[43] I. Olchowicz, A. Tłaczała, op. cit.
[44] Jan Paweł II, op. cit., p.76 (Encyclical , p.36).
[45] I. Olchowicz, A. Tłaczała, op. cit.

Summary

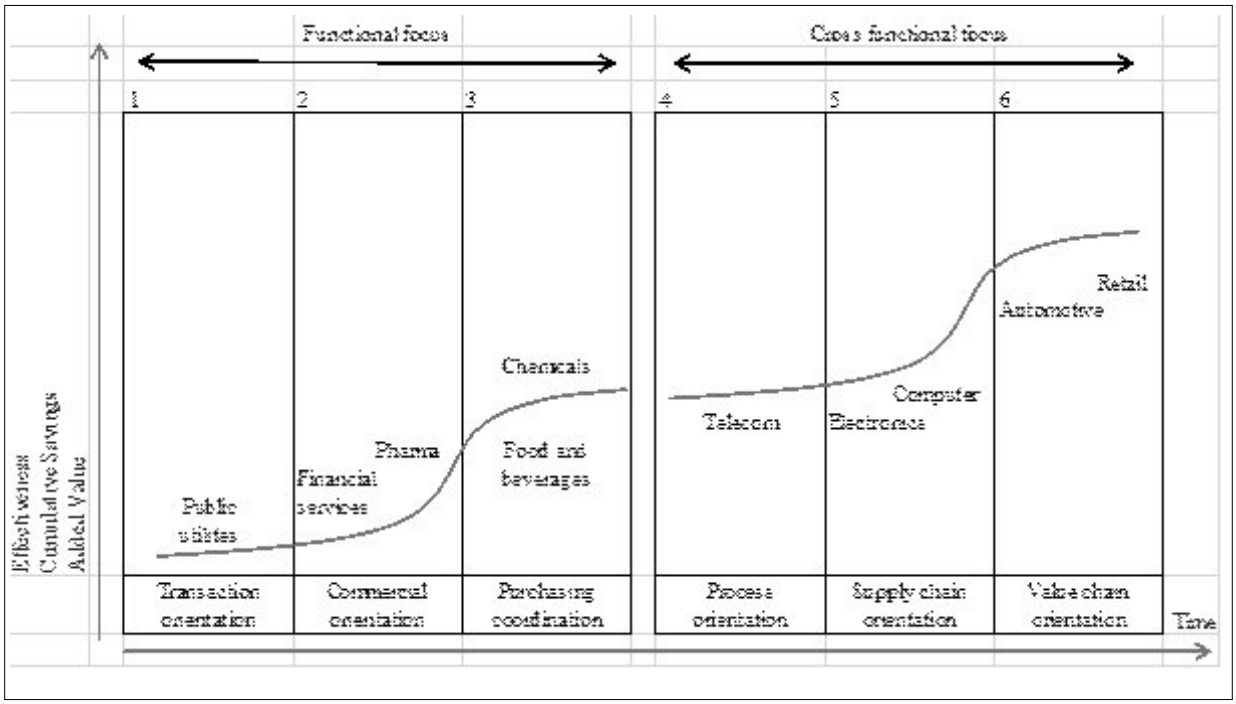
In summary, it should be stressed that service should be perceived as an act of intentional provision. Work is a broader concept than profit generating work; it comprises effort undertaken in order to satisfy human needs. Therefore, the need to prioritize, to find sense in undertaking activities as well as being open to truth in dialogue should be focused on. The only proper attitude which will release the desire to sacrifice is when one treats man as subject, not as an object in achieving one's goals. When is it possible? Only when man accepts that by serving others he can influence their lives. Opening to such wisdom may lead in consequence to satisfaction of employees, clients, workers and investors. A required condition to achieve this goal should be the application of coherent system of personal values of the service meeting members, consistent with the declared mission of the service organization, which would enable the employees to remain loyal to their profession.

Hanna Mackiewicz

Purchasing organization development. Get control of your supply chain.

How does purchasing evolve over time? What are the drivers behind the development of purchasing? What are the objectives of a mature purchasing organization?

An attempt to answer those questions is the below six-staged purchasing development model followed later in the text by a case example of implementation of supply chain oriented purchasing.



Stage 1. 'Transaction orientation; Serve the factory'

Focus	Serve the factory
Typical activities	• Clerical, Order processing • Main task is making goods available for production • Often no written processes • Reactive management, often based upon complaints
Staff Skills	Very little purchasing skills

[1] Based on analysis of prof. dr Arjan van Weele, Center for Supply Chain Management and dr Frank A. Rozemeijer, Institute for Purchasing & Supply Development, Eindhoven University of Technology

In this first stage the primary task of purchasing is to find appropriate suppliers and ensure that the plant does not run out of raw materials and supplied components. There is no explicit purchasing strategy in place. Formulation of purchasing goals is very rudimentary and intuitive. The value added of the purchasing function is considered to be securing availability of the right materials and goods for production. The organizational structure can be characterized by a decentral sub-department at plant level, mostly under the responsibility of a production or logistics manager. The purchasing function is strongly orientated on operational and administrative activities. Non production buying is predominately done by users themselves, and is considered by purchasing as of secondary importance. There is very little knowledge of what is exactly the total purchasing spend of the company. The culture is 'reactive'. Management is based on complaints. No complaints means purchasing does a good job. The information systems, if in place already, are developed by purchasing and very much administratively oriented. The purchasing staff consists usually of operational and administrative buyers, strongly task oriented, and with little education for the job.

At this stage a pro-active type of purchasing manager is recruited who can negotiate credibly with suppliers for lower prices. Striving for the lowest unit cost requires some independence from functions like product development, engineering and manufacturing. As a result purchasing, while reporting to a senior executive, has more autonomy at lower organizational levels. Purchasing strategy in this stage is characterized by a sharp focus on low prices. The purchasing function has its own department at plant level, reporting directly to the plant manager, who is interested in the savings purchasing adds to the bottom line. At this stage the purchasing function more and more becomes a specialist function. Specialist buyers are organized around different product groups. Buyers are concentrating on negotiating and contracting 'good deals'. The culture is that of playing hard negotiations with many suppliers. Management monitors on low prices and savings. Performance measurement is focused primarily on price and delivery performance of the suppliers. Cost savings are used as a prime performance indicator for assessing purchasing's overall effectiveness. Purchasing staff consists of operational and initial buyers with 'hands on' experience. Important skills are negotiating skills and the ability to make price comparisons.

Led by a strong central purchasing department to implement uniform buying policies and systems, the emphasis here lies on cross unit co-ordination and compliance with nationally negotiated contracts. This stage may lead to purchasing bureaucracy and lack of responsiveness from the decentral business units. At this stage for the first time there is some kind of strategy formulation, aimed at capturing the benefits from internal coordination and synergy. Apart from price and costs, the purchasing function is seen as having an important influence on the quality level of purchased products. The importance of the non-production purchasing becomes recognized by purchasing. Slowly the purchasing function is getting some attention from top management. However, the rest of the organization is still not convinced of the value adding potential of the purchasing function. Supplier management is a central issue at this stage and is characterized by looking for synergy by bundling purchasing power of the different divisions and adoption of differentiated supplier strategy based upon portfolio-thinking . The organizational structure of the purchasing function is a centralized purchasing department on divisional level. Formalization of the purchasing processes and procedures is in full speed. The purchasing organization is (still) strongly product oriented. The culture is characterized by a great amount of attention for communication and the intention to co-operate more internally between business units. Computerized information systems are in place now, but still not linked to each other. The stand alone databases are linked over the divisions, but not yet fully integrated. Purchasing staff has a specific purchasing background and training and there is a large number of different

Stage 2 'Commercial orientation; lowest unit price'

Focus	Reduce Cost
Typical activities	• Commercial • Tendering & Negotiating • Approved Supplier Lists • Managed by yearly purchasing plans, focusing on savings

Stage 3 'Coordinated Purchasing'

Focus	Savings through synergy
Typical activities	• Commercial • Contracting & Contract Management • (Global) sourcing • More use of tools, such as Portfolio matrix
Staff Skills	Staff training focused on quality, communication, analyses

purchasing jobs in place. Training is aimed on analytical skills, total quality management and communication skills.

At this stage the emphasis is on cross-functional problem solving with the objective of reducing total systems cost and not just the unit cost of purchased components. These cross-functional efforts often include non-production purchasing. The strategic importance of the purchasing function comes to full recognition, and purchasing is involved in strategic issues like core/ non-core questions and make-or-buy decisions. The structure is 'center-led'; operational buying disappears in the line i.e. is integrated with materials planning and/or scheduling or line planning. The culture is characterized by team-based management often by means of cross-functional teams. Improvement actions are aimed at integrating the purchasing processes over the different divisions. In this stage the focus is still internal, however, process oriented. Information systems are integrated with that of other departments/functions and divisions, but not yet with those of the most important suppliers. Purchasing performance measurement is done in the form of internal customer satisfaction surveys and benchmarking. People involved in the purchasing process have a broad business perspective and a high educational level. Skills looked for at this stage are strong team-building abilities, strong communication skills. Besides this, purchasing people need to have insight in the formulation of specifications, and a long term vision on the company.

Stage 4 'Internal integration cross-functional purchasing'

Focus	Total Cost of Ownership
Typical activities	• Cross Functional buying teams • Systems integration • Vendor rating • Performance based contracts
Staff Skills	Teamwork, conflict management,…

This stage is characterized by an outspoken outsourcing strategy combined with extra attention for co-operation with supply partners on product development and pre-production planning. The purchasing function concentrates on the effects the supply chain has on the resources of the company. Non-production buying is fully supported and/or executed by the purchasing function. Users order themselves against corporate contracts through advanced computer systems to which some major suppliers have been hooked up. This is especially true for the non-production area. Purchasing works hard to make things simple for their internal customers, by using systems contracting, purchasing-cards, electronic business and catalogues and/or EDI. Supplier management becomes supply chain management at this stage. Companies invest a lot to really involve supply partners in different business processes, instead of just buying goods and services from them as efficient and effective as possible. Responsibility for initial purchasing resides at cross-functional teams (inter-divisional and inter-organizational). There are residential engineering teams, and improvement teams with members from different disciplines, divisions and organizations (suppliers).The initial buying is no longer executed by a separate department but is spread around the company. Integration with other disciplines, divisions and especially suppliers is in full speed, to make integrated supply chain management possible. The management style is results driven, though supportive and coaching at the same time. The culture is characterized by participation and consensus style decision making. Important skills are knowledge of total cost-of-ownership principles, strategic supply chain management, and general managerial and leadership abilities. Information systems are not only internally integrated, but also with those of the partner suppliers.

Stage 5 'External integration; supply-chain management'

Focus	Supply Chain Optimalisation
Typical activities	• Outsourcing • E-sourcing, E-procurement,... • Supply Chain Management
Staff Skills	Strategic Supply chain Management

Stage 6 'Value chain orientation'

Focus	Total Customer Satisfaction
Typical activities	• Customer driven activities • Contract Manufacturing • Supplier Development • Global supplier network
Staff Skills	Value analyses in total value chain, knowledge of sales markets,…

The 'purchasing' strategy in this stage will be based on the recognition that most important for success is delivering value to the end-customer. To satisfy the needs in end-customer markets, subcontractors seek for support among their suppliers. Suppliers are consistently challenged to support their product/market strategies and to actively participate in product development. The goal is to design the most efficient and effective value chain possible to serve the end-customer. Purchasing strategy is evaporated in the total business strategy. The orientation is both stream upwards as well as downwards. In fact the traditional marketing and purchasing functions are integrated, and have become 'virtual' in the company. The functioning is based on a shared vision carried by all organizational members. The culture is entrepreneurial. Information systems are integrated as much as possible.

Case: Introduction of supply chain oriented purchasing (Stage 5 Purchasing Development Model)

The move to the supply chain oriented purchasing done by re-designing the supply chain from push to pull. Objectives for this activity were set on:

1. Integrating suppliers operations & supply chain into company's operations & supply chain
2. Improvement of the efficiency of company's supply chain
3. Reduction of stock in the supply chain
4. Reduction of logistic costs
5. Improvement of company's delivery performance for its customers

Pull principle introduced:

Material & components to be called off from suppliers based on factory replenishment, customer orders or consumption

- Pulled by factory replenishment requirement :
- Out of supplier's facility without intermediate stock
- Pulled by customer order (low runners) :
- Customer order generates call-off order for component
- Pulled by consumption :
- Determined by consumption in company assembly operation

Supply chain oriented purchasing organization needs to answer a question where is the added value in the suppliers and perform a kind of a lean exercise to find waste in supply chain.

Securing delivery case "Don't sit still for empty delivery promises"[2]

What is the way of proceeding when a supplier strings you along with a series of delivery excuses? You've probably heard them all, ranging from "Any day now," to "It's on the truck...I think." But just what are a buyer's rights in such situations? What can be done to avoid them? And how can a buyer get recovery of all damages when a supplier's delay really hurts?

Questions like these are becoming more pertinent as leadtimes lengthen and delivery dates become more slippery. And you'll like the answers better if you follow these four guidelines:

1. Stipulate exact delivery dates in your orders and contracts.
2. Inform the supplier in advance of your specific needs for the goods.
3. Make a written demand for assurance of performance if a vendor starts dragging his feet.
4. Claim repudiation and damages, including consequential damages if appropriate, if you still don't get delivery

The seller has an obligation to deliver the goods in accordance with the contract, even as the buyer is obliged to accept and pay for them. So the buyer's first job is to be as specific as possible about delivery. That means spelling out in contract or order when, where, and how delivery is to be made.

In turn, it means staying away from phrases such as "as soon as possible," or "at once." Those delivery terms are simply asking for trouble. They put the buyer at the mercy of an unscrupulous supplier. The buyer's first line of defense against delivery delays is a specific delivery date within the time-frame of his needs.

The "why" of the buy. It's also important to let the supplier know the purpose for which the goods are to be used. This can be done at the outset of the negotiations leading to the contract. If you are buying the goods for resale during a particular season, holiday, or one-time event, tell the vendor up front. Ditto if you are buying parts or components that must be phased into your overall production process. If the supplier knows of special needs and reasons for prompt delivery, you'll have taken a giant step toward getting more damages if he doesn't deliver.

But damages, of course, come later. Until there's no other recourse, you'd probably rather have the goods than the dollars. That's why you made the contract. So now you want to get the dilatory vendor's attention.

If the buyer has reasonable grounds for suspecting that the vendor isn't going to perform, he can make a written demand for assurances of performance. That means writing a letter to the supplier, calling his

[2] Purchasing Magazine, Newton, MA, 1998

attention to the delays, and demanding assurances that he is going to deliver. (It's not legally necessary, but will make it crystal-clear that you know your rights.)

Until the supplier comes through with delivery or acceptable proof that he will deliver, you can stop any performance the contract imposes on you. (Example: payments due). The vendor has a reasonable time to respond to you, but it is advisable to put in place an upper limit to it: 7 days. So once you have written for assurances, you have in effect started the clock on a countdown that assures something will happen.

That "something," if the vendor doesn't do anything in the way of delivery or delivery-assurances, is a repudiation of the contract. So now, your patience presumably exhausted, you can sue at once for damages both general and consequential.

Defining damages. Remember that the principal measure of contract damages when a breach occurs is the difference between the market value of the goods at the time the buyer learns of the breach, and the contract price. But consequential damages are often more far-reaching. On a delivery failure, they could include the cost of production downtime, and the loss of profits on goods not produced because of the missing item.

Key point: Consequential damages include any loss resulting from the needs of the buyer which the supplier was aware of at contract time. As we noted earlier, that's why it's vital that buyers let suppliers know the purpose of the goods, and what their real use is to be. The more the seller knows about the buyer's special needs, the greater the chance of getting extra damages if the vendor doesn't meet delivery schedules.

Note that word "schedules." It's appropriate because contracts often call for installment deliveries. Initial deliveries may be on time, but later ones may become tardy or sporadicperhaps in response to market conditions. If a buyer's complaints draw a lot of promises but the delays continue, he may want to demand assurances. Even if that demonstration of his seriousness doesn't end the problem, he will have put himself in a position to seek the goods elsewhere and press for damages.

Not surprising, problems of delivery delays and endless excuses are more likely to crop up during periods of fast-expanding economies. So be aware of a court ruling that says a supplier's failure to deliver a basic commodity at a time of a rising market price did in fact impair the value of the contract, permitting the buyer to demand assurances of future performance.

When the supplier failed to give adequate assurances in place of promises, the buyer was able to claim contract repudiation and damages.

Michał Salewski

Demographic situation in the Baltic Sea Region in the years 2000-2010 - selected issues

This paper presents selected issues concerning the demographic situation in countries of the Baltic Sea Region (BSR). The analysis covered nine countries: Denmark, Germany, Estonia, Lithuania, Latvia, Poland, Finland, Sweden and Norway.

The situation presents characterize: population, population density, rate of feminisation, natural motion, the average life expectancy and demographic aging.

Admission

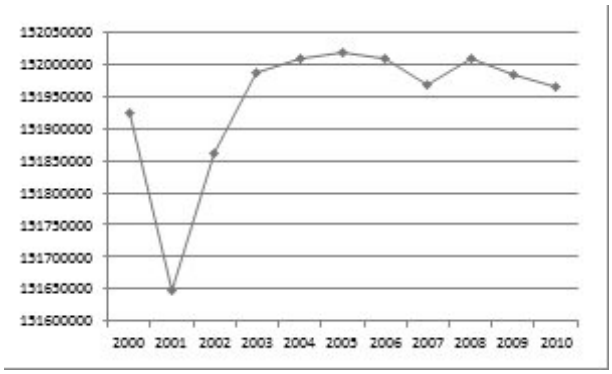
Article contains selected issues concerning the demographic situation in 2000-2010 in the countries of the Baltic Sea Region (BSR). The group included those countries: Denmark, Germany, Estonia, Lithuania, Latvia, Poland, Finland, Sweden and Norway. Due to the difficulty of obtaining data on Russia and the Kaliningrad region in the analysis does not include this area.

This article aims to show the dependence and demographic disparities in terms of appearing on the BSR. The analysis was based on data provided by EUROSTAT. The data used in this article: population, population density, rate of feminization, natural motion, the average life expectancy and demographic aging.

1. Population

The Baltic Sea Region was inhabited in 2010 151,966,883 people, as shown in Figure 1. Since 2008 recorded the population decline. The greatest population decline occurred in 2001, whose causes can be looked for in the revaluation in the population censuses of the population in the countries of the BSR carried out at the beginning of the twenty-first century.

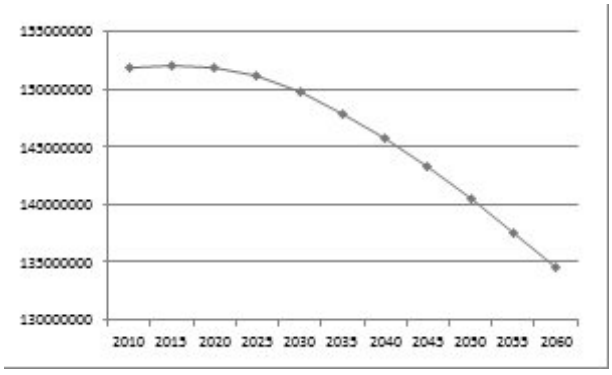
Figure 1. The population of the Baltic Sea Region in 2000-2010 (persons)



Source:http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&init=1&plugin=1&language=en&pcode=tps00001 (08.09.2011)

Based on demographic projections of Eurostat the population BSR will increase slightly to 2015. And then reach 152,070,531 people. In subsequent years will be a systematic decline in the population. Forecast was made until 2060, in which the population will reach BSR 134,527,716 for the people and will be lower than projected in 2015 to 17,542,815 people. The largest decreases in population will be felt in Germany, where in fifty years will leave approximately 15,384 thousand. people, representing 19% of the population living in Germany in 2010 and in

Figure 2. Forecast of population of the Baltic Sea Region for the years 2010-2060 (persons)



Source:http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&init=1&plugin=1&language=en&pcode=tps00002 (08.09.2011)

Poland 14% of the population recorded in 2010.

Analyzing population declines in percentage terms, the largest numerical decline in population will take place in Latvia and Lithuania, where the amount falls respectively 26% and 20% of the population in 2010.

According to forecasts, the population should increase in three countries: Finland, Sweden and Norway respectively by 7%, 23%, 36% of the population in 2010, although it will not compensate for population losses in the rest of the Baltic Sea Region. These changes population is shown in Figure 3.

2. Population density

Most densely populated country is Germany, where live 230 people per square kilometre, the next country is Denmark 127 people per square kilometre, and Poland in third place with a population density of 122 persons per square kilometre. The least populated country is Norway, where live less than 16 people per square kilometre , and Finland with 17 people.

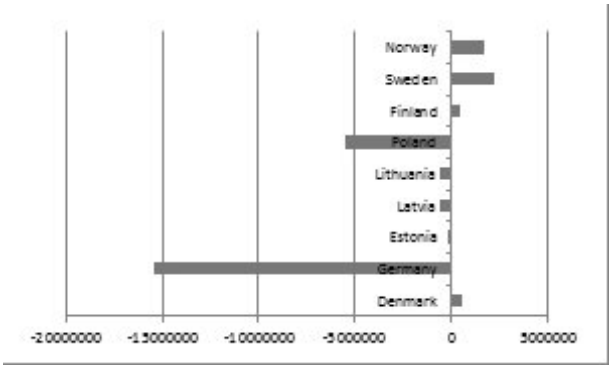
Disparities in population density are the result of harsh climatic conditions prevailing in those countries that are not beneficial to humans. Adverse conditions also affect the unequal population density. In Norway and Finland, the population density areas around the Arctic Circle is very low. At that place the population is concentrated mainly around the cities.

3. Feminisation coefficient

Structure by sex directly affects on the reproduction of the population, which is illustrated by feminisation coefficient (the number of women per 100 men). At the Baltic Sea Region inhabit more women than men, as shown in Figure 4.

The highest value of feminisation coefficient was in 2000-2010 in Estonia and Latvia. Its upward trend is visible in Lithuania and Poland.

Figure 3. Changes in the population of the Baltic Sea Region 2060 years, compared to 2010 (persons)

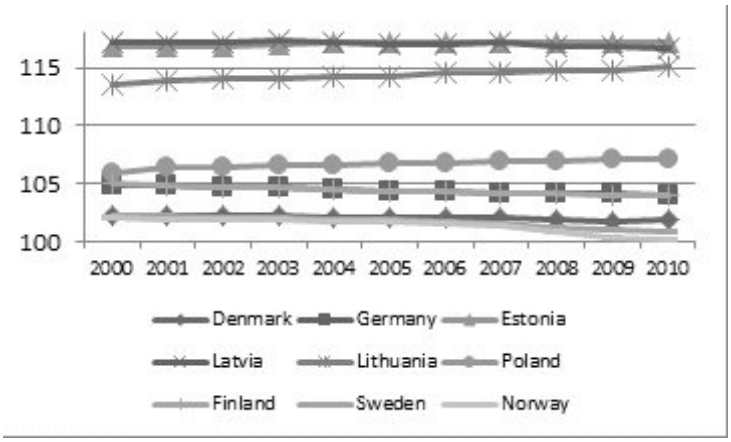


Source:http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&init=1&plugin=1&language=en&pcode=tps00002 (08.09.2011)

However, coefficient of the feminisation in Denmark took a constant value during analize period and fluctuated around 102 women per 100 men.

Unfavourable values coefficient of feminisation , especially its decline, was recorded in Germany, Finland, Sweden. But in Norway the numbers of women and men were equalized in 2010. In demographic terms, it should be considered as an adverse phenomenon that affects the growth in numbers of the population of the area.

Figure 4. Feminization factor Baltic Sea Region in 2000-2010



Source:http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&init=1&plugin=1&language=en&pcode=tps00011 (08.09.2011)

4. Natural motion of population

The structure of the population by gender has a direct impact on the reproduction of the population, through the forming of the processes, which include among others: birth and deaths.

The analysis of natural motion can be made on the basis of birth rate, which is the difference between the number of people were born and died in a given period of time, in a given territory per 1000 inhabitants. The intensity of births and deaths is territorially diverse and depends primarily on the socio-economic development of the region, climate, cultural development and the customs and religious beliefs. There are many factors that determine the level of births and deaths, and thus indirectly affect population growth. These factors can be considered both the level and intensity of births and deaths.

The factors in the level and intensity of birth include among others[1]:

- the number and structure of women of childbearing age,
- the number of marriages and the age structure of the bride and bridegroom,
- pattern of fertility,
- pattern of mortality, particularly infant and child mortality,
- employment policy and professional activation of women,
- level of society education
- system of wage, family allowances and other economic incentives,
- the availability of contraceptives,
- operation of the legislation on abortion,
- religious beliefs.

The factors relating to the level and intensity of death include:

- the number and structure of population by sex and age,
- pattern of mortality by sex and age
- pattern of mortality by cause of death,

Table 1. Natural population growth in the Baltic Sea Region in 2000-2010

geo\time	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Denmark	1,7	1,3	1	1,3	1,6	1,7	1,7	1,6	1,9	1,4	1,6
Germany	-0,9	-1,1	-1,5	-1,8	-1,4	-1,8	-1,8	-1,7	-2	-2,3	-2,2
Estonia	-3,9	-4,3	-3,9	-3,8	-2,7	-2,2	-1,8	-1,2	-0,5	-0,2	0
Latvia	-5	-5,7	-5,3	-4,9	-5,1	-4,9	-4,7	-4,3	-3,1	-3,6	-4,8
Lithuania	-1,4	-2,5	-3,2	-3	-3,2	-3,9	-4	-3,9	-2,6	-1,6	-2
Poland	0,3	0,1	-0,1	-0,4	-0,2	-0,1	0,1	0,3	0,9	0,9	0,9
Finland	1,4	1,5	1,2	1,5	1,9	1,9	2	1,8	2	2	1,9
Sweden	-0,3	-0,3	0,1	0,7	1,2	1,1	1,6	1,7	1,9	2,3	2,7
Norway	3,4	2,8	2,4	3,1	3,4	3,4	3,7	3,5	3,9	4,2	4,1

Source:http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&init=1&plugin=1&language=en&pcode=tps00007 (08.09.2011)

- changes in the level of living
- medical progress in the fight against premature mortality,
- range of health services.

During the period examined, only three countries have noted positive natural increase (more people in a given period were born than died). The highest values of natural increase was recorded for Norway.

For the years 2000-2010 negative natural increase was also recorded for the three countries. Analysing the value of the natural growth should be stressed that the worst situation occurred in Latvia, where the ratio adopted in the period and the highest values ranged from -3.1 (2008) to the level of -5.7 (2001). The situation in Germany is a disadvantage, because during the period ratio increased from -0.9 (2000) to -2.2 (2010 year), assuming the highest value of -2.3 in 2009.

The preferred value of natural growth rate in the period adopted for Estonia, where the level of -4.3 (2001) rose to zero, which means that the number of people who died was replaced by the number of persons born. Also advantageous is the situation in Poland, where the ratio of the level of -0.9 in 2003, in 2008-2010 reached 0.9.

5. Average length of life

Noteworthy is the fact that the increased average life expectancy of women born during the period. This applies to all countries of the Baltic Sea Region (Table 2 p.29).

The largest increase in average life of a woman born in the period were recorded in Finland, where women live longer on average about 2.3 years. The smallest increase in average life expectancy of women was recorded in Lithuania, where the average life expectancy for women rose by 1.2 years.

The longest live women living in Finland and Sweden (83.5 years). And the shortest life expectancy have Latvians who were born in 2009, have before them an average of 78 years of age, and women from Lithuanian 78.7 years (Table 3 p.29).

The largest average increase in man life expectancy born in 2000-2009 reported for Finland, where male life expectancy has increased by as much as 4.6 years. The smallest increase in average life expectancy was recorded in Lithuania. There, men on average live longer by 0.7 year.

[1] J. Z. Holzer: Demografia,, PWE, Warszawa 2003, p..163
[2] Ibidem, p. 163

Table 2. The average female life expectancy at birth in 2000-2009

geo\time	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Denmark	79,2	79,3	79,4	79,8	80,2	80,5	80,7	80,6	81	81,1
Germany	81,2	81,4	81,3	81,3	81,9	82	82,4	82,7	82,7	82,8
Estonia	76,2	76,4	77	77,1	77,8	78,1	78,6	78,8	79,5	80,2
Latvia	:	:	76	75,8	76,2	76,5	76,3	76,5	77,8	78
Lithuania	77,5	77,6	77,5	77,8	77,7	77,3	77	77,2	77,6	78,7
Poland	78	78,4	78,8	78,8	79,2	79,3	79,7	79,8	80	80,1
Finland	81,2	81,7	81,6	81,9	82,5	82,5	83,1	83,1	83,3	83,5
Sweden	82	82,2	82,1	82,5	82,8	82,9	83,1	83,1	83,3	83,5
Norway	81,5	81,6	81,6	82,1	82,5	82,7	82,9	82,9	83,2	83,2

Source:http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&init=1&plugin=1&language=en&pcode=tps00025 (08.09.2011)

The longest live citizens of Sweden and Norway, and the shortest people of Lithuania and Latvia.

1. Demographic of age

In all these countries in 2000-2010 the percentage of persons over 65 years increased, in addition to Norway, where the percentage of people over age 65 decreased, as shown in Figure 5 (p.30).

The highest percentage of people over 65 year lives in Germany and represents 20.7% of the total population. The least of those aged 65 year and over is living in Poland.

In all countries the proportion of BSR decreases in the age range between zero and 14 years, as shown in Figure 6 (p.30).

Analysing the population in terms of age should also be considered indicator of demographic of old age, the ratio of the total number of inactive people (aged 65 years and more) to the total number of people of working age (between 15 and 64). These indicators show the demographic aging of societies of the Baltic Sea Region. Demographic aging process depend on increase the share of its oldest (65 years) with little involvement of young people in a given society. It is characteristic of highly developed countries. This process is due to overlapping of many demographic and economic factors. Is associated with low birth rate, high

Table 3. The average male life expectancy at birth in 2000-2009

geo\time	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Denmark	74,5	74,7	74,8	75	75,4	76	76,1	76,2	76,5	76,9
Germany	75,1	75,6	75,7	75,8	76,5	76,7	77,2	77,4	77,6	77,8
Estonia	65,2	64,8	65,2	66,1	66,4	67,3	67,4	67,2	68,7	69,8
Latvia	:	:	64,7	65,6	65,9	65,4	65,4	65,8	67	68,1
Lithuania	66,8	65,9	66,2	66,4	66,3	65,3	65,3	64,8	66,3	67,5
Poland	69,6	70	70,3	70,5	70,6	70,8	70,9	71	71,3	71,5
Finland	74,2	74,6	74,9	75,1	75,4	75,6	75,9	76	76,5	76,6
Sweden	77,4	77,6	77,7	78	78,4	78,5	78,8	79	79,2	79,4
Norway	76	76,2	76,4	77,1	77,6	77,8	78,2	78,3	78,4	78,7

Source:http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&init=1&plugin=1&language=en&pcode=tps00025 (08.09.2011)

average life expectancy, high levels of preventive medicine and geriatrics, a high level of development of pension funds.

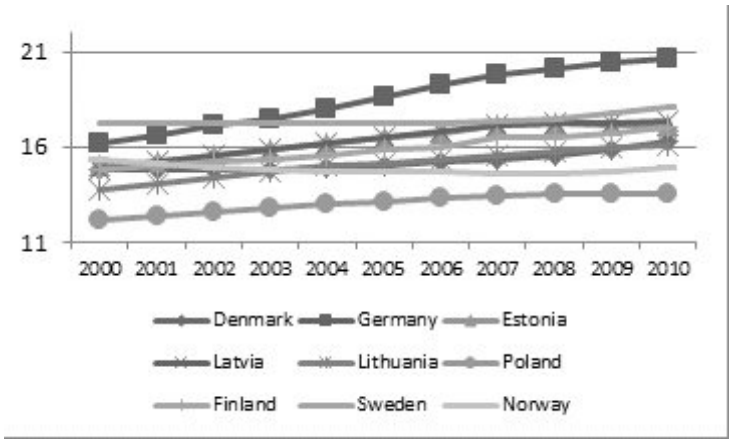
The process of demographic aging is also economic and social problem that is associated mainly with the cost of maintaining the old population (working age) by working-age population, whose number is reduced. Member of high-value demographic aging in the BSR are: Germany, Sweden and Finland. It is assumed that the old age population is in countries where the share of old population in the total population is over 15%. In the case of the Baltic Sea Region this applies to all countries.

Summary

The article analyzes demographic situation have occurred in countries belonging to the present Baltic Sea Region in 2000-2010 and whose effects may be felt in terms of socio-economic development in the future.

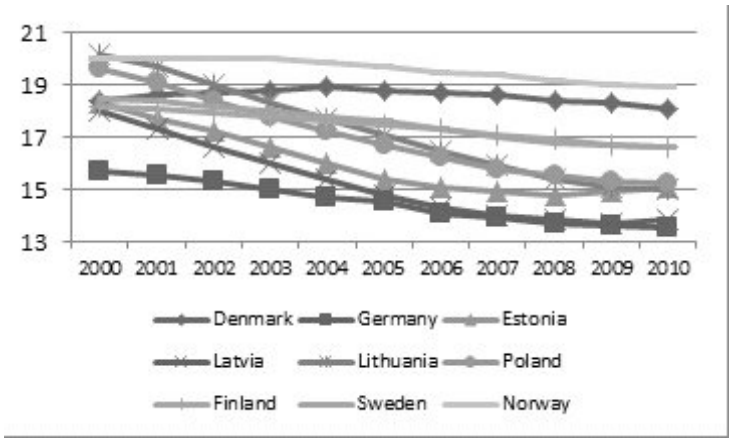
It was observed tendency the decline in population and increase in the number of people in retirement age, which may adversely affect

Figure 5. Percentage of population aged 65 years and over living in the Baltic Sea Region in 2000-2010



Source:http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&init=1&plugin=1&language=en&pcode=tps00028 (08.09.2011)

Figure 6. Percentage of population aged 0-14 years living in the Baltic Sea Region in 2000-2010



Source: http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&init=1&plugin=1&language=en&pcode=tps00010 (08.09.2011)

Table 4. Old age demographic factor

geo\time	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Denmark	22,2	22,2	22,3	22,3	22,5	22,7	22,9	23,2	23,6	24,1	24,9
Germany	23,9	24,5	25,2	25,9	26,8	27,8	28,9	29,9	30,4	30,9	31,4
Estonia	22,4	22,7	23,0	23,5	23,9	24,3	24,5	25,1	25,3	25,2	25,2
Latvia	22,1	22,6	22,9	23,3	23,6	24,1	24,4	24,8	24,9	25,1	25,2
Lithuania	20,8	21,3	21,7	22,0	22,3	22,3	22,5	22,7	23,0	23,2	23,3
Poland	17,6	18,0	18,2	18,4	18,6	18,7	18,9	19,0	18,9	18,9	19,0
Finland	22,2	22,4	22,7	22,9	23,3	23,8	24,0	24,8	24,8	25,2	25,6
Sweden	26,9	26,8	26,6	26,5	26,4	26,5	26,4	26,4	26,7	27,1	27,7
Norway	23,5	23,2	23,0	22,7	22,5	22,4	22,4	22,2	22,1	22,1	22,5

Source:http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&init=1&plugin=1&language=en&pcode=tsdde510 (08.09.2011)

theregion's economic development. This is due to the lengthening of the average length of life.

Also, trends associated with the natural motion of populations are unfavourable. In some countries BSR was noted still negative natural increase, which is also evident in the share of people aged between 0-14 years in the general population of the population.

Anetta Waśniewska

A brief review of the ways to gain information about consumption illustrated by an example of the Kingdom of Denmark

Summary: The paper presents basic characteristics of the Kingdom of Denmark. It portrays institutions that provide information useful in the process of consumption research and briefly describes the scope and topic of their activity. The direct references to various sources constitute a valuable source of information regarding different countries and regions

Introduction

Consumption was present in men's life from the very beginning as a physical necessity to satisfy the needs. The awareness of the importance of consumption was rising in the process of human development. It was used by rulers and extended over the centuries, sometimes transforming into extreme consumerism. Its direct connection to the quality of life is a perfect illustration of how important the consumption is to societies and economies of countries, regions and the whole globe. Therefore, its observation, measurement and analysis help to understand the way in which societies function. Consumption research is very useful in creating tools for evaluating countries and social organisms in compliance with criteria which in the Middle Ages were disregarded, but now can be more important than the nationality. The analysis of factors which form consumption allows the attempt at anticipating future behavior of an individual customer as well as of global economy. The complexity of the issue strives for an interdisciplinary approach, which comprises economy, sociology, statistics and does not leave out religion and psychology. The key to carrying out a thorough research is precise information, which may be difficult to obtain due to widespread information noise and manipulation.

1.Brief description of the kingdom of denmark, oriented at presenting general information essential for consumption research

The following presentation may prove helpful in defining the direction of consumption research. The dissimilarity between Polish and Danish political systems, geographical position and social conditions that influence the consumption can be inspiring.

Denmark is a country in north-west Europe, surrounded by the North sea and the Baltic sea. The territory of Denmark consists of Jutland and 405 other islands (over seventy of them are inhabited). The country has a coastline of 7314 km[1] (apart from autonomous Greenland and Faroe Islands), therefore it can be stated that the maritime business is of a great importance there and generously contributes to the level of consumption. The climate in Denmark is temperate, maritime; the temperature varies between 0 C and -1°C in February and 15°C - 17°C in July. The precipitation receives about 800 mm per year; it is often windy.[2] "Rivers are short and affluent in water but they are of no economic importance[3]".

Because of low soil capability, the majority of farmlands need cultivation techniques and land reclamation. Agricultural landscape prevails in Denmark, whereas natural vegetation is present only in reserves which take up 5% of the country. About 1/3 of the territory is under protection[4].

What is worth noticing is that peat deposits are used as a fuel and the issue of recycling and greening the agriculture is very important for the Danish government. About 66.3% of the country is suitable for cultivation and it is one of the highest percentages in the world[5].

The population of Denmark in 90% consists of Danes[6], the remaining 10% are Turkish, Norwegian, British, Irish, German, Swedish, Polish and people from former Yugoslavia. The prevailing religion is Protestantism (state church), as it comprises 80% of believers in Denmark. As of[7] 01.01.2011, Denmark's population is 5,560,628.

Since the mid seventies the population growth in Denmark has been very slow and in the eighties the country dealt with adverse population growth (1.63‰)[8].

The population of Denmark consists mainly of people over 65 years old they comprise 17.2% of the whole population, whereas children under the age of 15 comprise only 20.5%. There are 102 women per 100 men and the median age for a Dane is 77 years for a man and 81 years for a woman.[9]

The average population density is 125 inhabitants per square kilometer. The biggest population centre is Zealand (the agglomeration of Copenhagen), Funen and eastern Jutland. About 85% of the population lives in cities - 21% inhabits Copenhagen, which is the biggest one. Another large cities inhabited by over 100 thousand people are: Århus, Ålborg, Odense and Vejle. Nearly 20% of the national labour force is employed in the industry and construction, 77% in the services and trade,

[1] Own work based on: Encyklopedia PWN, Wydawnictwo Naukowe PWN, 2010.; Press materials of the Kingdom of Denmark Embassy in Warsaw; http://www.spanghus.dk. August 2012
[2] Own work based on the climatic statistics report by the Danish Meteorological Institute from: http://www.dmi.dk/dmi/tr02-14.pdf. Danmarks Meteorologiske Institut August 2012
[3] Encyklopedia PWN, Wydawnictwo Naukowe PWN, 2010.
[4] Own work based on Action Plan for Biodiversity and Nature Conservation in Denmark, from: http://www.naturstyrelsen.dk/NR/rdonlyres/19075AD0-20EB-4AAC-8420-791072452B88/5402/ActionPlan_300604.pdf and materials of Danish Nature Agency, August 2012.
[5] After: Statistical yearbook 2011, from: http://www.dst.dk/pukora/epub/upload/16218/sy2011.pdf. August 2012
[6] Own work based on statistical data: Population at the first day of the quarter by region, sex, age, marital status, ancestry, country of origin and citizenship July 2011, from: www.statbank.dk. August 2012
[7] Own work based on statistical data: Population 1 January by parish, sex, age and member of national church 2011, from: www.statbank.dk. August 2012
[8] Own work based on statistical data: Summary vital statistics 2011, from: www.statbank.dk. August 2012
[9] Own work based on statistical data: Summary vital statistics 2010, Population 1st January by sex, age and country of birth 2010, Life expectancy for new born babies by sex 2009-2010, from:

Table 1. Population number of Denmark in selected years:

Year	Population measured in thousands
1970	4907
1980	5122
1985	5111
1990	5135
2000	5330
2010	5535

3% in farming and forestry[10].

The unemployment rate in Denmark has been relatively high since the eighties - it reached 10% only to climb above this percentage in 1991 and 1992. Currently the unemployment was alleviated to 6%[11].

In accordance with the constitution adopted in 1953, the Kingdom of Denmark is a constitutional monarchy. A monarch acts as a head of state and ought to be the member of the Evangelical Lutheran Church in Denmark. The king and the parliament have the legislative authority, whereas the executive authority is exercised by the ministers on behalf of the monarch. Acts of legislation and government acts signed by the king need to be countersigned by the proper minister who bears the responsibility[12]. The executive authority is exercised by the prime minister, who is the head of the government. The prime minister and other ministers shoulder the constitutional responsibility to the Norwegian High Court of Realm. The judiciary is in the hands of independent courts of first and second resort and the Supreme Court.

Denmark was one of the first countries in the world to implement public welfare system which included all of the citizens. The system is administrated by autonomous authorities and it is financed by the state with taxes and premiums paid by the employers and employees. There is a system of voluntary unemployment insurances and workers' compensation insurances. The retirement age is 65 and remains equal for men and women. Apart from the retirement pension, the citizens can receive maternity benefits, sickness and death benefits and child benefits for children under 16, which are paid regardless of the family income. The expenditure on social security in 2000 was 60% of the budget expenditure. All citizens are provided with health care; hospitalization and home nursing care are free. Children and teenagers are covered by free obligatory periodic health examinations.

There is a system of compulsory education for children between 7 and 16. The state subsidises education in classes from 0 to 10, private schools inclusive. Primary education lasts for 10 years, then the education can be continued secondary education lasts for 2 or 3 years, depending on the school profile. Graduating from the secondary school allows entering higher education. Government expenditures on education vary from 13% to 14% of total expenditures in 2000 decade, but there was a increase in amount of money transferred to education sector [13] (Chart 1 p.34).

The highest educational institution in Denmark is the Royal Danish Academy of Fine Arts (established in 1742). Another eight of the biggest and oldest universities in Denmark are: University of Copenhagen established in 1479, as of 2010 there were 38 thousand students; Aarhus University - established in 1928, as of 2010 there were 32.6 thousand students; University of Southern Denmark - established in 1988, as of 2010 there were 15 thousand students[14].

2. The possibilities of gaining information about consumption in denmark

The basis for carrying out research on consumption is gathering the information about its size, structure and formative factors. It can be stated that these are mainly statistical information concerning the phenomenon of ex-post and information regarding the intake, analysis of which can lead to identifying the factors that form consumption in the future.

The most common starting point in consumption research is information deriving from the secondary sources, eg. study on economy, sociology, demography and especially statistics. The sources may come from central and regional institutions, both state and non-governmental, and research facilities.

In case of the necessity to supplement the research or after exhausting the secondary sources it is possible to use the primary

www.statbank.dk. August 2012

[10] Own work based on statistical data: Population 1st January, by urban areas 2010, Population at the first day of the quarter by region, sex, age, marital status, ancestry, country of origin and citizenship 2011, Employed (in thousands) by industry (10-grouping), region and sex 2011, from: www.softbank.dk. August 2012

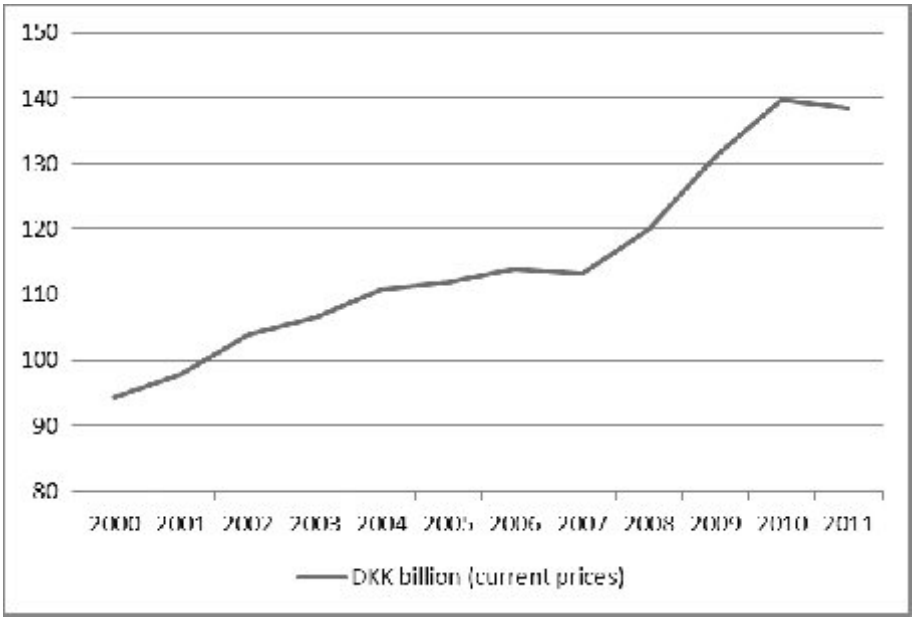
[11] Statistical yearbook 2011, from: http://www.dst.dk/pukora/epub/upload/16218/sy2011.pdf, page 103. August 2012

[12] The Constitutional Act of Denmark, from: http://www.eu-oplysningen.dk/upload/application/pdf/0172b719/Constitution%20of%20Denmark.pdf. August 2012

[13] Own work based on materials of the Ministry of Children and Education, and data from: OFF23: Classifications of functions of government expenditures by function (Yearly) http://www.statbank.dk August 2012

[14] Based on: Universities by status, institution, education, ancestry, sex and age 2010, from www.statbank.dk ; materials of the Ministry of Children and Education; materials published by selected universities. August 2012

Chart 1 Government expenditures on Education 2000-2011



sources such as: accounts and reports kept by enterprises, information derived from specialists and information gained directly from the consumers.

The following part presents some of the sources providing information about the Kingdom of Denmark. Selected institutions may prove helpful in carrying out the regional research. It can also start a discussion on the systematization of gaining information about consumption.

„Danmarks Statistik" is subordinate to the Ministry of Economic Affairs and Growth of the Kingdom of Denmark, managed by the National Statistics Council and directly by the National Statistician equivalent to the Office General Director. The Office is divided into the following departments: (chart 2 p..35)

The Office carries out studies and issues press releases, deals in publications, and runs the statbank.dk website containing key statistical indicators database, information including aggregated data from National Censuses of Population and results of studies. Information is published in accordance with the calendar, besides, each item date specified in the calendar[15] is confirmed.

The scope of published information (statbank.dk) useful for the study on consumption is divided into the following categories[16]:

Timeframe of the data available is different for different indicators and ranges from 1901 for demographic data. Since 2000, information are published more regularly, and the range of indicators has been significantly broaden. The website features friendly interface and the function for exporting large tables, also in a variety of database formats (xls, csv, etc.).

The office also sends the data to the following international organizations that have signed agreements with it:

The European Central Bank (ECB), International Monetary Fund (IMF), World Bank (WB), Organisation for Economic Cooperation and Development (OECD), Agendas of the United Nations Organizations (UN).

About 100 government agencies carry out their own specialized statistical surveys, the results thereof are publicly available. Some of the data is interesting in terms of the study of consumption, however, the amount of information regularly updated is much smaller than the publications of the Statistical Office. In majority, the materials are only available in Danish, often supplemented by articles and analysis.

Institutions conducting studies on consumption are, among others:

- The Economic Council, Danish Competition and Consumer Authority,
- Danish National Institute of Social Research.

Higher education system of the Kingdom of Denmark is based on

[15] Scheduled Releases - Statistics Denmark http://www.dst.dk/en/Statistik/offentliggoerelser.aspx August 2012
[16] List of categories on statbak.dk: http://statbank.dk/statbank5a/default.asp?w=1402 August 2012
[17] The the data are transmitted within the ESS European Statistical Support http://www.dst.dk/HomeUK/About/introsd.aspx May 2012
[18] http://www.dst.dk/HomeUK/About/Library/danstat.aspx May 2012

universities, universities of technology and academies, some of the schools have departments conducting studies on consumption, the results thereof are available in English. Department of Economics, Copenhagen Business School (CBS) is one of such colleges. Also, Roskilde University has approved the research strategy for 20092012 that covers consumption issues in terms of globalization and regionalization of economies. Each college has a separate office responsible for establishing and organizing inter-university cooperation, contacts with entrepreneurs and participation in international research programs through a designated coordinator.

The Kingdom of Denmark has an embassy in Warsaw and six consulates, including one in Gdansk. The consul can assist and provide information in order to establish inter-university cooperation. The Embassy informative and culture operations are oriented for presentation of the country. Only institution, foundation or association may establish a formal cooperation with the Embassy. Currently, the Embassy is not conducting any programs supporting scientific activities.

Eurostat is the body of the European Commission, which publishes statistical data through its website eurostat.ec.europa.eu. Eurostat does not deal in data collection, in this field it relies entirely on data supplied by community members and partners. The main task is to harmonize the data and its presentation, and adapt it to comparability across all countries surveyed. Updates are carried out according to the calendar, making the website the best tool to collect statistical information on many countries and in terms of many indicators of consumption. EuroStat issues a statistical yearbook, which contains, among other, comparison of price index and brief analysis of the countries and the whole community, also in comparison to world economies. The scope of information given by Eurostat is divided thematically into:

An interesting possibility is the access to "raw" data in the form of updated twice a day text tables. Combined with the publishing calendar,

Table 1. Official statistic publications in Denmark and 6 other countries,

		Individual Statistics	Economic statistics	Agriculture Statistics	Multi-domain	Total portfolio
DK	Statistics institution	32	52	8	5	**97**
	other authorities	8	14	2	4	**28**
	not carried out	6	3	1	0	**10**
NO	Statistics institution	35	54	5	8	**102**
	other authorities	7	9	5	0	**21**
	not carried out	4	6	1	1	**12**
SF	Statistics institution	34	56	3	9	**102**
	other authorities	9	11	7	0	**27**
	not carried out	3	2	1	0	**6**
SV	Statistics institution	34	64	6	9	**113**
	other authorities	9	3	5	0	**17**
	not carried out	3	2	0	0	**5**
NL	Statistics institution	37	65	7	9	**118**
	other authorities	6	3	2	0	**8**
	not carried out	3	1	2	0	**9**
AU	Statistics institution	24	41	8	6	**79**
	other authorities	14	22	1	3	**40**
	not carried out	7	6	2	0	**16**
IRL	Statistics institution	21	46	6	2	**75**
	other authorities	16	9	5	6	**36**
	not carried out	9	14	0	1	**24**
Number of subjects in all		46	69	11	9	**135**

[19] Own work based on the information websites of the government agencies of the Kingdom of Denmark
[20] How price of the alcohol influences the choice of alcohol in Denmark; the project run currently http://www.cbs.dk/en/Research/Departments-Centres/Institutter/node_3381/Menu/Research-Projects, August 2012
[21] Globalization, Regionalization and Local Responses in the strategy of the Department of Society and Globalisation University of Roskilde: http://www.ruc.dk/fileadmin/assets/isg/01_Strategi_Politik_Retningslinier/Strategy%20Plan%2009-12.pdf August 2012
[22] Through the official website: www.visitdenmark.pl and the Danish Cultural Institute: http://dik.org.pl/ August 2012
[23] EuroStat 2010 statistical yearbook: http://epp.eurostat.ec.europa.eu/portal/page/portal/product_details/publication?p_product_code=KS-CD-10-220

General access:

- General and regional statistics
- Economics and Finance,
- Demography and social conditions,
- Industry, trade and services,
- Agriculture, fisheries and forests,
- Foreign trade,
- Transport,
- Environment and energy,
- Science and technology

Only for scientific researches[24] (individual permission basis)

- households,
- labor market data,
- adult education,
- income and living conditions of population,
- revenue structures of the population,
- households structures.

it allows for creating a tool for direct importing of the data within the specified range and precision, and their automatic analysis, comparison. Importantly, the tables contain consumer reviews on a monthly and annual basis.

Commissions and the European Commission's General Directorates conduct their own research, including the field of consumption. As part of good practice, they refer in their reports and studies to the sources used. The result is the creation of additional tools for presenting statistical data.

European Commission's General Directorate for Economics and Finance manages the AMECO database that through the AMECO-online website presents fast and reliably data on consumption, among other things, allowing you to save the data in the form of text files or XLS files. The database contains data that are most complete from 1995 and apply to member states and members of the OECD and come from national statistical offices, OECD and EuroStat.

European Commission's General Directorate for Employment, Social Affairs and Social Inclusion runs statistics and analysis in the field associated with consumption. The data relay in detail information about the labour market, income distribution and socio-economic situation that directly affects consumption. The Directorate publishes reports from surveys and researches conducted in co-operation with research networks. An interesting issue in terms of the subject and data mining is research coordinated by APLICA on behalf of the Directorate.

Directorates provide also additional databases and studies not listed due to their abundance that may be useful in the study of consumption also in relation to countries that are not members of the European Union.

Data is collected for research and evaluation of projects carried out by UN agencies. Data is presented on data.un.org, which is run by the United Nations Statistics Division. Information is updated according to the publishing calendar. The information includes civilizational development and demographics indicators, and statistics involving the consumption in relation to finances, agricultural roars, trade and labour market. A monthly statistical bulletin is published, presenting data from 2000 and containing, among other, price, employment and income of population indices. It should be noted that most agencies and commissions have their own statistics divisions. A good example is the statistical website of the United Nations Commission for Europe, which has gathered in one place the results of censuses and socio-demographic indicators.

International Monetary Fund (IMF) shares data collected within two standards: (Special Data Dissemination Standard (SDDS) includes financial and economic data of countries participating in or applying for international funding programs. The General Data Dissemination System (GDDS) includes demographic, socio-economic and financial indicators of all IMF member countries. Information is updated according to the established publishing calendar. Data provided by the IMF are useful for comparing indicators across many countries, in a narrow scope of basic economic indicators. The advantage of the information presented by the IMF is their harmonization, although, it should be remembered that in many cases the pre-arranged unit of currency is applied: SDR. Depending on the category and source of statistical information, data provided by the IFM date back to 1948, the following categories are available: International Financial Statistics, Trade, Payments Balance, Public Finance Statistics, and within the various types of surveys.

Furthermore, the information can be found in the specialized literature, which is a natural source of information for research on consumption. Large amount of information and the need to update it suggests a focus on electronic editions of literature and information available in the authoritative sources published on the interent. Denmark as a subject of studies in the Polish language is rare, better available are items describing the Nordic region, or items in English or Danish. The oldest item in the Polish language, containing statistical data, is "Danja - Kraj i naród" Ing. Stemann Warszawa „Księgarnia Polska", 1926, by a Danish language teacher.

Currently, 110 Polish towns and cities have their partners in Denmark. When viewing reports and notes from meetings and conferences of partner towns, no information related to consumption was found, but the database of project coordinators can be helpful when conducting research and gathering information from direct sources.

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[24] Access to EuroStat microdata: http://epp.eurostat.ec.europa.eu/portal/page/portal/microdata/introduction 25 The scope of data made available in this way is presented in the list: http://epp.eurostat.ec.europa.eu/NavTree_prod/everybody/BulkDownloadListing?sort=1&file=table_of_contents_en.pdf August 2012

[25] AMECO Annual macro-economic database

[26] AMECO-online: http://ec.europa.eu/economy_finance/ameco/user/serie/SelectSerie.cfm August 2012

[27] Employment and social analysis - Employment, Social Affairs Inclusion - European Commission http://ec.europa.eu/social/main.jsp?catId=501&langId=en August 2012

[28] Applica Current Projectshttp://www.applica.be/projects.html August 2012

[29] UN monthly statistical bulletin: http://unstats.un.org/unsd/mbs/app/DataSearchTable.aspx August 2012

[30] The UNECE Statistical Division = United Nations Economic Commision for Europe http://w3.unece.org/pxweb/ August 2012

[31] IMF eLibrary Data http://elibrary-data.imf.org website contains data from various sources, whose reliability is confirmed by the application of practices in accordance with the standards specified in the text. August 2012

[32] Own work, based on the web sites of cities, municipalities and the company Spangshus Online: Polen Info. Dania Info http://www.spangshus.dk August 2012

Summary

Consumption as an observed phenomenon is a demanding research object. This is due to the need of the harmonized collection of information: broad, validated and accurate. Presented method of searching for information, which consists of a multi-faceted study of a particular country, allows you to organize the process, and suggests measures to obtain the information necessary to study consumption. The range of available information on the consumption of Denmark is wide and easy to access. Denmark, through membership in international organizations, significantly unifies the statistical categories with other countries. The institutions mentioned in the text, apply the formalized practice of obtaining and analysing data, providing their quality and consistency. Due to the limited volume of this work, only sources were presented in which are some tips for other ways of acquiring information. Great emphasise is to be put on verification of data and our own experience since in the era of digital communication, error is rapidly duplicated in interrelated databases. It can be noted that electronic information sources and websites that provide it are in majority as they are convenient tools that increase efficiency.

Katarzyna Kamińska

Incomes of individuals and households in Sweden in 2009

The following paper is aimed to document a segment of the proceedings and results of the initial stage of work on the Baltic Economic Observatory, conducted in the Department of Economics and Management of the Gdynia Maritime University, Poland. It concerns work on one of the modules of the Observatory, the Baltic Consumption Index. In the article, the state and changes in the incomes of the population of Sweden are presented, as the base for consumption of individuals and households. Basic data about Swedish households are reported, and total or disposable incomes are presented, derived from employment or business activity. The article portraits distribution of income with respect to age, sex, employment status and group, type of household and region of living, together with income disparities.

Introduction

To discuss and analise the structure of consumption of a given country, it is necessary to first learn the level of income, which a given society is able to assign to consumption. The aim of the following paper is to report the structure of total and disposable income of the Swedish society. Year 2009 was adopted as the reference year, as the latest year, for which all data is available not only for Sweden, but also for most of other countries monitored within the Baltic Economic Observatory project, which enables future comparisons.

The main source of the data was the main Swedish statistical office, Statistiska Centralbyrån, denoted further as SCB, and the Eurostat. We should underline a broad range of available data and easy access to it. The SCB collects and publishes at their webpage, data gathered by several different public institutions. Statistics published online are not only diverse and detailed, but mostly immediately presented in English. Most of reports and analyses have at least a summary section in this language, as well. Also the Eurostat offers detailed data on Sweden, which verify and broaden Swedish data.

This article will present:

1. Data on total incomes from work and business activity in the population, according to sex, and resulting income income disparities, summarised by the Gini coefficient, against the background of other European Union countries.

2. Data on disposable income in several aspects: according to status of employment and employment group, age, sex, type of household and number of children, and region of living.

Presented data come from year 2009 and chosen previous years to indicate trends or tendencies. Values are given in Swedish crowns (SEK),

Table 1. Total income from employment and business in Sweden in 2009, in SEK thousands, in deciles, for women and men

Deciles	Women and men		Women		Men	
	Age 20 and older	Age 20–64	Age 20 and older	Age 20–64	Age 20 and older	Age 20–64
1	21 092	11 065	21 301	11 207	21 084	11 015
2	98 931	86 583	92 169	79 778	114 811	93 644
3	141 601	152 364	123 321	136 913	172 743	175 465
4	179 211	202 826	153 947	181 662	212 449	234 666
5	214 570	240 875	185 041	215 450	250 731	273 000
6	248 898	271 851	216 969	243 837	285 930	303 889
7	283 045	302 694	248 468	270 196	320 752	336 388
8	322 435	340 642	281 363	300 539	363 768	379 897
9	381 996	401 258	327 470	346 698	435 028	452 863
10	629 305	659 921	487 701	515 961	740 571	768 030
Mean value top 5 %	783 596	821 199	584 248	618 655	933 087	969 546
Mean value	252 088	267 008	213 775	230 224	291 787	302 985
P10	69 341	43 656	65 244	41 375	75 175	47 094
P50 median	231 985	256 962	201 108	230 302	268 865	289 772
P90	429 881	452 012	361 844	381 606	495 755	514 531
P90/P10	6,2	10,4	5,5	9,2	6,6	10,9
Gini-coefficient	0,353	0,356	0,351	0,333	0,352	0,360

Source: SCB

the mean exchange rate of which in 2009 to Polish zloty was 2,4538 SEK = 1 PLN, and to euro 10,6191 SEK = 1 EUR.

1. Incomes and income disparities in the population

Mean income from employment and business activity per person in Sweden in 2009 was 252 088 SEK in the group above 19 years of age, and 267 008 SEK in the group aged 20-64 (Table 1). Median income was 231 985 SEK in the group aged above 19 years, and 256 962 SEK in the group aged 20-64, which amounted to 92,63% and 96,25% of the mean income, respectively which attests to even distribution and growth of income in the population. A person at the upper threshold of the 1st decile earned 69 341 SEK in the above 19 group, and 43 656 SEK in the group aged 20-64. Similar values for a person at the lower threshold of the 10th decile were 429 881 SEK and 452 012 SEK respectively. The Gini coefficient, according to SCB, equalled 0,353 (age >19) and 0,356 (age 20-64). It was lower among women it equalled 0,331 and 0,333 respectively and for men it was higher - 0,352 and 0,360 respectively.

Chart 1 Total income from employment and business in Sweden per person, in 2009, in SEK thousands, for respective deciles, for women and men.

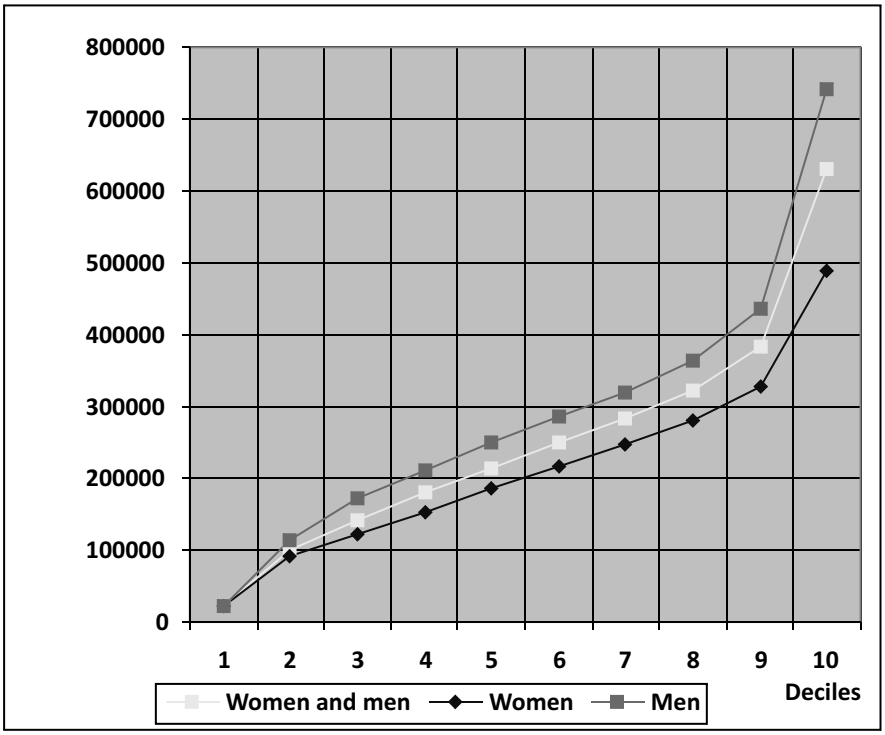


Table 2. Gini coefficient for Sweden and other European countries in years 2001-2009

STATE	2001	2005	2009	STATE	2001	2005	2009
European Union (27 countries)	-	30,6	30,4	Latvia	-	36,1	37,4
European Union (15 countries)	29	29,9	30,3	Lithuania	31	36,3	35,5
New Member States (12 countries)	-	33,2	30,7	Luxembourg	27	26,5	29,2
Belgium	28	28,0	26,4	Hungary	25	27,6	24,7
Bulgaria	26	25	33,4	Malta	-	26,9	27,2
Czech Republic	25	26,0	25,1	Netherlands	27	26,9	27,2
Denmark	22	23,9	27,0	Austria	24	26,2	25,7
Germany	25	26,1	29,1	Poland	30	35,6	31,4
Estonia	35	34,1	31,4	Portugal	37	38,1	35,4
Ireland	29	31,9	28,8	Romania	30	31	34,9
Greece	33	33,2	33,1	Slovenia	22	23,8	22,7
Spain	33	31,8	32,3	Slovakia	-	26,2	24,8
France	27	27,7	29,8	Finland	27	26,0	25,9
Italy	29	32,8	31,5	Sweden	24	23,4	24,8
Cyprus	-	28,7	28,4	United Kingdom	35	34,6	32,4

Source: Eurostat

Mean income for women is significantly lower, than that of men. Women earned on average 213 775 SEK in the group aged >19, and 230 224 SEK in the group aged 20-64. Taking these values as base, men earned 36,48% and 31,62% more, respectively. Differences were a bit lower with the median values. In the group aged >19, in the first decile, women' incomes are slightly higher, than those of men. But starting from the second decile, a significant prevalence of men is visible their income is higher, than those of women, by ca. one third consequently through all deciles to the 10th. This is clearly shown in Chart 1. Taking into account only the working age, disparities are slightly milder: again in the first decile we see a slight predominance of women, but from the second onwards of men. In the lower deciles their income is higher by ca. 20%, and in the higher by 25% reaching almost 50% in the last decile.

Eurostat reports different coefficients for income disparities, than the SCB (Table 2). In its tables, in 2009 Sweden reached the Gini coefficient of 24,8, securing third place ex equo with Hungary. The index had grown markedly since 2005 (by 1,4), and in comparison with 2001 it had grown by 0,8. Most of the EU countries noted their worst results in 2005, and after that the disparities have lowered a bit with Sweden the reverse situation occured.

Mean value for the entire European Union was 30,4. Countries with the lowest disparity, apart from Sweden, comprised Slovenia (22,7), Hungary (24,7), Slovakia (24,8), Czech Republic (25,1), Austria (25,5), Finland (25,9). Those with the highest income disparity were Latvia (37,4), Lithuania (35,5), Portugal (35,4), Romania (34,9), Bulgaria (33,4), Greece (33,1). The lest income disparity could be found in in the countries once forming the Austro-Hungarian empire, and those of Scandinavia. What is notable, the mean levels and diversity in the Gini coefficient for the so-called "old" and "new" EU members were almost the same.

Taking into account just employment, without business activity (Table 3), the mean annual income thus obtained in 2009 in Sweden was 362 600 SEK, and a person at the median dof the distribution earned 316 400 SEK. A person at the upper threshold of the first decile earned 232 500 SEK, and a person at the lower threshold of the tenth decile 530 300 SEK,

Table 3. Income from work in Sweden in years 1995-2009, figures in SEK thousands, 2009 prices.

Category	1995	2000	2005	2009
All				
Mean	254,6	310,6	340,1	362,6
P10	165,7	194,7	221,0	232,5
Median	229,6	269,9	299,2	316,4
P90	364,9	456,9	492,9	530,3
Women				
Mean	217,5	264,6	297,2	318,3
P10	156,0	182,8	211,8	222,2
Median	202,3	246,2	273,0	290,6
P90	288,1	362,0	407,3	440,0
Men				
Mean	279,1	342,4	370,5	395,7
P10	178,7	207,8	234,3	245,2
Median	249,8	291,5	319,1	341,6
P90	407,2	507,7	545,8	587,3
Womens income as % of men				
For mean	77,9	77,3	80,2	80,4
For median	81,0	84,5	85,6	85,1

or just 228 % of the income of the first one. During 10 years, mean income had grown by 16,46%, and the median value had risen by 17,18%.

Mean income of women was 318 300 SEK, and the median 290 600 SEK. Income disparity was lower: the income of a person at the treshold of the tenth decile equalled to 198% of the income of a woman at the threshold of the first decile. Mean income among men was 395 700 SEK, median income 341 600SEK, and the border value of the tenth decile equalled 240 % of the border value of the first decile, which attests to income disparity higher, than among women. Women' income from employment equalled 80,4 % of the mean income among men, and the median among women 85,1% of that of men. During 10 years mean among women had caught up with that of men by just 3,1 % points, and the median by just 0,6 % points.

It should be noted, that in comparison to 1975, number of working men, despite fluctuations, had not undergone major change, while the number of working women had risen from 662 to 1 134 th., i.e. by over 70%.

2. Equalised disposable income

Below we present data concerning equalised disposable income according to: employment status and employment group, age, sex, type

of household and number of children, and region of living.

Median disposable income for a professionally active person aged 20-64 in 2009 was 214 500 SEK (Table 4). It had grown since the previous year by 2,1%, and during 10 years since 2000 by 27,15%. Among people in gainful employment that income was, naturally, higher, and equalled 231 600 SEK. It had grown with respect to the previous year, by 3,3%, and in previous 10 years by 29,46%. Disposable income in various employment groups point at the egalitarian character of employment and pay: the median disposable income of manual worker was 208 700 SEK, of an assistant non-manual employee 235 000 SEK, of an intermediate one 246 400 SEK, and of a professional and other higher level one 287 000 SEK, which was just 37,51% higher, than that of a manual worker. Compared to year 2008, the income of the second group had grown the most (3,5%), and of the fourth the least (2,6%). It is worth underlining, that during previous 10 years incomes of all working groups had been growing very evenly, and it was the manual workers, who had gained the most: 27,49%. Even more had been gained by farmers and the self-employed, a group with rather low income, which had grown by almost 33%. The egalitarian character of employment and pay, and the rise of pay over 15 years, are shown in Chart 2 (p.42).

Median disposable income of the non-gainfully employed was 140 700 SEK in 2009, and equalled as much as 60,75% of the income among the gainfully employed. Median value for students was 125 800 SEK, and for the unemployed, the sick and pensione rs 166 200. Other non-gainfully employed earned 103 700 SEK. Incomes of these groups had grown by just 1,1% since previous year, and 6,6% during previous 10 years.

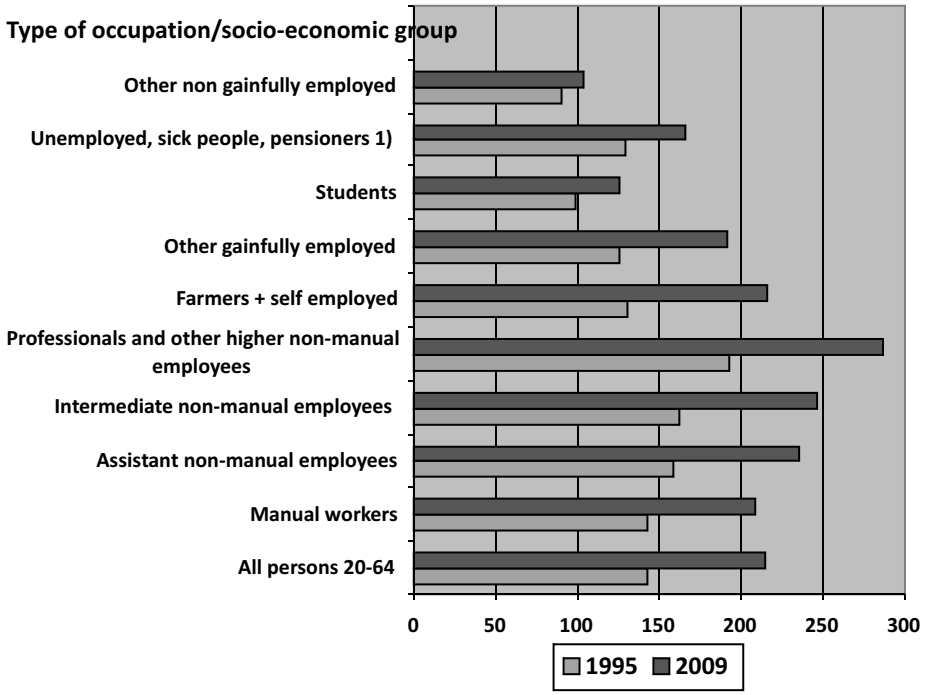
The next table (Table 5) presents the distribution of the disposable income according to age. Median disposable income per person was 193 700 SEK in 2009. It equalled 178 800 SEK in the group aged 0-19 (in the group aged 16-19 it approached the general median) and, naturally, that income came not from the children and youth's own work, but from that of their parents, custodians or from social transfers. In the group aged 20-64, median disposable income reached 211 200 SEK, and in the group aged 65 and over - 164 900 SEK.

Table 4. Equalised disposable income by occupation for all persons age 20-64 in Sweden in years 1995-2009, median value in SEK thousands, 2009 prices

Type of occupation/socio-economic group	1995	2000	2005	2009
All persons 20-64	142,4	168,7	186,5	214,5
Gainfully employed	151,8	178,9	201,1	231,6
Manual workers	142,7	163,7	182,1	208,7
Assistant non-manual employees	158,9	187,4	200,4	235,0
Intermediate non-manual employees	162,2	194,5	217,0	246,4
Professionals and other higher non-manual employees	192,9	226,0	242,5	287,0
Farmers + self employed	131,0	162,3	182,6	215,8
Other gainfully employed	125,7	143,2	194,8	190,9
Non gainfully employed	115,3	132,0	140,7	140,7
Students	98,9	116,1	120,0	125,8
Unemployed, sick people, pensioners 1)	129,4	150,9	156,8	166,2
Other non gainfully employed	90,4	94,7	102,8	103,7

1) People aged 20-64 who have an aggregate income of pension, sickness benefits and labor market assistance of more than half of the total acquired income from employment and business, are classified in the group "Unemployed, sick people, pensioners".
Source: SCB

Chart 2 Comparison of equalised disposable income by occupation for all persons age 20-64 in Sweden, between years 1995 and 2009, median value in SEK thousands, 2009 prices.



Source: SCB

Table 5. Equalised disposable income by age in Sweden, in years 1995-2009, median values in SEK thousands, 2009 prices.

Age	1995	2000	2005	2009
All individuals	130.9	151.2	169.5	193.7
0–5	112.8	134.8	151.1	169.6
6–15	118.0	135.1	154.7	179.2
16–19	131.1	150.0	164.1	192.3
20–24	120.2	142.4	147.0	166.6
25–34	128.7	153.5	170.8	189.2
35–44	131.0	149.6	171.7	200.5
45–54	163.7	184.8	199.6	229.0
55–64	166.8	200.7	225.7	259.8
65–74	133.1	145.9	167.8	191.8
75–	110.1	116.4	132.6	143.5
0–19	118.0	137.1	155.6	178.8
20–64	141.5	167.0	184.9	211.2
65–	120.8	128.9	147.8	164.9

Source: SCB

At the beginning of professional life, in the age of 20-24 years, one could receive median disposable income amounting to 166 600 SEK. Employees aged 25-34 almost achieved the median for the whole population, and employees at higher age achieved successively higher incomes, reaching 259 800 SEK in the age group of 55-64 years, which was still only 34,22% more, than the median for the whole population. In the pensioner age, the median income was lower. The distribution of disposable income over age groups, and its change over 15 years, are presented in Chart 3 (p..43).

Disposable income had grown, compared to year 2008, by 2,0%, and in comparison to year 2000, by 28,11%. The median income of the most professionally active people had risen the least: by 26,47%, and the

highest growth was that of non-working youth 30,42 %. From among people in working age, compared to people of the same age from 10 years earlier, the group aged 35-44 years had noted highest growth of disposable income (34,02%), and income of those aged 20-24 had grown the least. Disposable incomes falling to children aged 6-15 years, and of the elderly people aged 65-74 years, had also risen considerably above the mean growth, compared to people being in these groups 10 years earlier by 31,46% and 32,64% respectively.

When taking under consideration equalised disposable income per person according to the type of household (Table 6), for persons above 20 years of age the median income in 2009 equalled 199 800 SEK. It had grown compared to year 2008 by 2,1%, and in comparison to year 2000, by 26,86%.

Median income for women living alone was 140 400 SEK, was much higher for single men 185 100 SEK, and was the highest in the whole population for couples living together without children 248 800 SEK. Other cohabiting households with members other than children aged under 19 most often adult children living with parents also had a good income position the median of their incomes reached 187 500 SEK.

Among families with children under 19 years, median income was 201 000 SEK, which was slightly more, than for the entire population. Only for families with three or more children it was lower, than the general median (165 700 SEK). On the other hand, the situation was significantly worse with single mothers (131 900 SEK on average), especially those bringing up more, than one child (125 400 SEK). The situation of single fathers was markedly better here, although also significantly below the median for the whole population (171 400 SEK). Graphical comparison of incomes of all mentioned types of households, and comparison to incomes from 1995, are given in Chart 4.

Disparities can clearly be noticed, when we look closer at the median incomes falling to children, depending on the type of household. The general median was in this case 178 800 SEK, and for the children of two cohabiting parents 192 700 SEK. For the children of single parents it was 135 800 SEK (70,47% of the sum for full families), in which for children of single mothers 126 900 SEK (65,85%). The disposable income for children brought up outside families was exceptionally low, with just 63 800 SEK.

Compared to year 2008, the median income had grown the most for pairs without children (3,0%), pairs with two children (4,1%), and single

Table 6. Equalised disposable income by type of household in Sweden, in years 1995-2009, median value in SEK thousands, 2009 prices.

Type of household	1995	2000	2005	2009
All 20+	136,3	157,5	176,2	199,8
Women living alone	111,8	121,0	133,1	140,4
Men living alone	128,3	147,5	163,5	185,1
Cohabiting without children	166,1	196,1	217,4	248,8
Cohabiting with children 0–19 years	129,8	154,5	172,6	201,0
1 child	145,7	172,2	189,6	217,0
2 children	128,4	152,0	171,7	202,2
3 or more children	109,2	128,7	144,7	165,7
Single women with children	105,7	113,7	123,5	131,9
1 child	110,5	119,5	132,9	144,1
2 or more children	99,3	108,7	115,5	125,4
Single men with children	118,5	128,0	149,5	171,4
1 child	120,8	128,7	154,7	173,4
2 or more children	107,1	125,9	139,1	168,5
Other single parent households	171,7	208,1	226,5	256,7
Other cohabiting households 1)	140,1	152,6	173,2	187,5
All 0–19 years	117,8	137,0	155,6	178,8
Children to single parents	103,0	112,9	120,9	135,8
Children to single women	101,7	109,9	118,0	126,9
Children to single men	113,7	128,0	145,7	173,1
Children to cohabiting	122,6	146,2	164,9	192,7
Not living with parents	71,8	55,7	73,8	63,8

1) A household with no children 0-19 years of age but other adults. The other adult is most often a young adult still living with his/her parent(s).
Source: SCB

fathers with two or more children (up to 9,6%). Incomes falling to children of single parents had grown by 4,0%. The slowest growth occured with groups of women and men living alone, and single mothers with one child, and the incomes of pairs with one child had even slightly fallen (-0,3%). Compared to median incomes of 10 years earlier, the incomes, that had grown the most, were those of pairs with two children (33,03%) and single fathers with one (34,73%) or two and more children (33,84). The income situation had improved much slower with single mothers (16,03%) and women with one (20,59%) or more children (15,36%). It is also clearly visible with disposable income per child: when the mean growth for the median income had been 30,51%, the income for children not raised by parents had grown just by 14,54%, for the children of single mothers by 15,47%, while for those raised by two parents by 31,81%, and by single fathers by as much as 35,23%.

A supplement of disposable income distributions is the distribution according to the region of living (Table 7). For the whole population, the

Chart 4 Comparison of equalised disposable income by type of household in Sweden, between years 1995 and 2009, median value in SEK thousands, 2009 prices

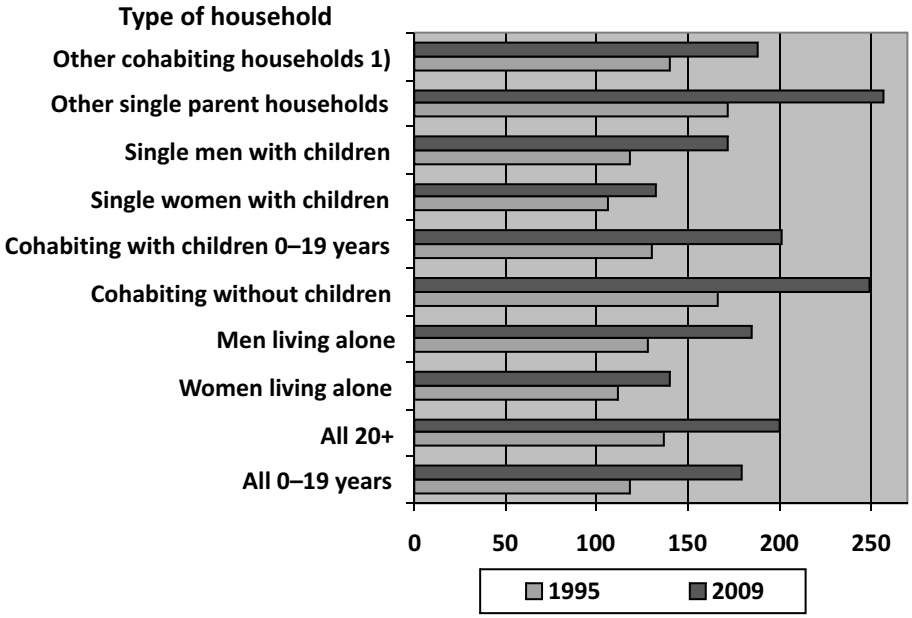


Table 7. Equalised disposable income by region in Sweden in years 1995-2009, median value in SEK thousands, 2009 prices.

Region	1995	2000	2005	2009
All individuals	130,9	151,2	169,5	193,7
Large cities > 200 000 inhabitants	131,5	158,8	170,6	194,1
Suburban municipalities	142,9	171,1	187,9	217,5
Municipalities 50 000 – 200 000 inhabitants	131,3	148,7	169,5	191,4
Commuter municipalities	131,2	149,8	170,5	194,4
Other municipalities	126,1	144,6	163,1	184,9

Source: SCB

median disposable income was 193 700 SEK in 2009, and it was higher than that from year 2008 by 2,0% and from that of year 2000 by 28,11%. A markedly even distribution of income, regardless of the type of region of living, can be noticed there are no vivid income disparities between cities and the countryside. Median values for all types of municipalities differ from the general one by no more, than 5% in minus and 10% in plus. The highest income is achieved by the inhabitants of suburban municipalities (217 500 SEK). Then large cities of >200 000 inhabitants, municipalities of 50 000 200 000 inhabitants, and commuter municipalities cluster close to each other. Only other municipalities mostly rural and sparsely populated note a significantly lower median disposable income.

During the previous year, median incomes had grown most for the "other municipalities" and commuter municipalities, while the incomes of the inhabitants of medium towns had barely grown, and for those from large cities they had even slightly fallen. The same order can be observed for changes within the previous 10 years: large cities had noted growth, which had been markedly slower (22,23%), and all other municipalities had grown by more than 27% (commuter municipalities by 29,77%). The order of municipalities by growth rate is similar, but a bit more even, when we compare year 2009 to year 1991.

Summary

Sweden is one of Europe's and world's most affluent countries. Incomes in the population are high, but even it is a highly egalitarian society. Income disparity is among the lowest in the E.U. It is also low, when taking into account the region of living. Income from employment during the whole cycle of working life does not show excessive disproportions. Due to high social transfers and pensions, the groups, which do not yet work, or have already stopped working, also share relatively high disposable incomes. It can be noticed, that women' income status in the labour market, markedly as single mothers, is significantly lower and that position had not improved with respect to other groups during 10 years prior to 2009.

In further papers concerning Sweden, and reporting work results within the Baltic Economic Observatory, we will present in detail issues such, as: the structure of consumption of individuals and households, and their material status, living conditions and professional position in the labour market.

Bartosz Surawski

Consumption in Finland - selected aspects

Finland, country situated in Northern Europe, is inhabited by over 5.3 million of citizens - consumers. This article presents the situation of consumption in years 2009 and 2010, due to the availability of data from Finnish data sources. Economic indicators for the country in 2009-2010 present a gradual rebound from the bottom of recession and the recovery in economics was expected at the end of 2009, which was demonstrated by improving business outlook expectations indicators both on the side of consumers and investors. In 2010, as expected, the Finnish economy began to climb out of a deep recession.

In 2009 and 2010, Finnish consumers consisted of over 1.45 million of families households (in 2010 there was a slight increase in the number of families - about 0.3%). Statistically, one family in 2009 and 2010 was consisted of 2.8 people. Individual consumption fell by 2.1% in 2009 year-on-year, instead public consumption grew by 1%. In 2010, private consumption has also increased - by 2.6% compared to the previous year. This result can be explained by economic recovery and improvement in the labor market[3].

The following table presents the intake of selected products by a statistical Finnish consumer in 2009 and 2010.

Table 1. The intake of selected products per one Finn in 2009-2010.

Selected products	Intake in 2009.	Intake in 2010.
Milk products	183.9 kg	183.4 kg
Butter	3 kg	2.9 kg
Cheese	18.7 kg	19.1 kg
Wheat products	48.2 kg	46.5 kg
Rice	15.5 kg	16.1 kg
Meat	73.2 kg	75.2 kg
Coffee	8.9 kg	8.3 kg
Sugar	32.6 kg	31.8 kg
Tobacco	0.5 kg	0.6 kg
Alcohol	8.3 l	8.1 l

Source: Consumption of selected commodities -http://www.stat.fi/tup/suoluk/suoluk_tulot_en.html

Each Finn consumed about 184 kg of milk products in 2009, the same in 2010. It is worth mentioning, that the intake of these products falls successively every year. In the last years the falls amounted to about 1% year-on-year, but in 1980-1990 they amounted to over 10% a year. In previous years, a gradual increase in butter intake can be observed. In 2009 and in 2010 each Finnish consumer ate on average 3kg of it. The intake of cheese in the previous years continued on a similar level to that in 2009 and 2010, i.e. 18-19 kg. No major changes can be seen in the consumption of rice products - in 2009, consumption was 15.5 kg per person, in 2010 was slightly higher - 16.1 kg. Despite the lack of major changes in the consumption of wheat products, in 2010 shows a decrease of consumption from 48.2 to 46.5 kg. The intake of meat oscillated around 72-74 kg per person in the last years and was greater then in 1990-2000. There has been a marked increase in consumption in 2010 - up to 75.2 kg. The intake of coffee amounted to around 9 kg per person in 2009 and also does not show greater changes in consumption over the previous years, but in 2010, the consumption of coffee has fallen to 8.3 kg. The consumption of sugar in 2009-2010 was at an average level of about 33 kg per person. With regards to tobacco, the Finnish reduced the consumption by half year-on-year. In 2009 tobacco intake amounted to 0.5 kg per capita, in 2010 was similar 0.6 kg per person. The intake of alcohol in the last two years slightly fell, reaching 8.3 litres per person in 2009, and 8.1 litres per person in 2010. It is worth mentioning, that in the 1970s it was lower by half[4].

Consumption expenditures of households started to decline a year earlier and this trend reinforced in 2009. The downturn was observed both in goods and services sectors. However, due to the increase in real wages by almost 3% in 2009 year-on-year, a significant increase in private

[1] Gospodarka Finlandii. Podstawowa charakterystyka - http://helsinki.trade.gov.pl/pl/finland/article/detail,233,Gospodarka_Finlandii.html and Państwa członkowskie Unii Europejskiej, Finlandia - http://polskawue.gov.pl/Panstwa,czlonkowskie,Unii,Europejskiej,98.html#FINLANDIA

[2] Family population and average size of family in 19502009 - http://www.stat.fi/til/perh/2009/perh_2009_2010-05-28_tau_002_en.html

[3] Informator ekonomiczny o krajach świata. Finlandia - http://www.msz.gov.pl/files/Informator%20ekonomiczny%20-%20pdf/Finlandia/Finlandia%2003.pdf and Ogólna sytuacja gospodarcza Finlandii w 2010 roku - http://helsinki.trade.gov.pl/pl/finland/article/detail,1634,Ogolna_sytuacja_gospodarcza_Finlandii_w_2010_roku.html

[4] Consumption of selected commodities - http://www.stat.fi/tup/suoluk/suoluk_tulot_en.html

[5] Gospodarka Finlandii. Podstawowa charakterystyka - http://helsinki.trade.gov.pl/pl/finland/article/detail,233,Gospodarka_Finlandii.html

savings was observed. An average monthly income per employee amounted to 2670 euro in 2009, in 2010 - 3040 euro.[6] An average annual income per household amounted to 39032 euro in 2009 and 40086 euro in 2010[7]. Nevertheless, the upward trend of the debt position of households continued, although lower than in 2008. The rising in 2009 and 2010 unemployment caused the lack of income increase at population disposal, despite the increase in remunerations and decrease in income taxes. The increase in saving rate contributed to the decrease in consumption by 3% in 2009. The gradual increase in buying power value was expected in the following year, yet due to the rising unemployment it did not lead to the growth in consumption[8].

The following table presents percentage layout of Finnish households' expenditures in particular groups of products and services in 2009-2010.

As listed in the table, the most of income the Finnish spend on housing and energy costs. These costs amount to almost 27% and rose since the 2008 year by about 2%. The second greatest expenditure of a Finnish household is food and non-alcoholic beverages. In 2009 it comprised 13% of income. Compared with the previous year it increased by 0.6%, but in 2010 consumers reduced their spending to the level of 12.6%. The third greatest expenditure is recreation and culture - it amounted to 11.6% of a Finnish family income in 2009, in 2010 it was similar 11.6%. In the last two years savings in this field occurred. Another significant expenditure of a Finnish household is transport. In 2009 every 10 euro was spent on this aim, yet compared to 2008 these expenses fell by 1.5%. In 2010, spending on transport started to increase again reaching a level of 11% (an increase of 0.8%). In the last years expenses on restaurants, cafés and hotels remained on a similar level -

Table 2. The structure of Finnish households' expenditures according to products and services groups (in %) in 2009-2010

The groups of products and services	Expenditures proportion in 2009.	Expenditures proportion in 2010.
Housing and energy	26.9	26.9
Food and non-alcoholic beverages	12.9	12.3
Recreation and culture	11.7	11.5
Transport	10.2	11.0
Miscellaneous goods and services	9.2	9.2
Restaurants, cafés and hotels	6.5	6.3
Alcoholic beverages, tobacco	5.3	5.1
Furnishings, household equipment and routine maintenance of the house	5.2	5.4
Clothing and footwear	5.0	5.0
Health	4.5	4.6
Communications	2.2	2.2
Education	0.5	0.4

about 6.5% of income. In the previous years these costs declined only by 0.1-0.2% a year. It was the same in 2010 - spending on restaurants, cafes and hotels reached the level of 6.3%. Expenses on alcoholic beverages and tobacco present a very interesting feature. In 2009 they constituted 5.3% of the Finnish expenses and were 0.5% higher than in the previous year. This is the first increase of these expenditures since 2003. In the previous years expenses on alcoholic beverages and tobacco declined by about 0.1-0.5% each year. In 2010 there was a return to the trend of decreasing - expenditure on alcohol and tobacco accounted for 5.1%. Expenditures on furnishing, household equipment and routine maintenance of the house amounted to 5.2% in 2009. Also this expenses group shows some but short-term savings of the Finnish, as in three previous years they balanced on 5.4% - the same as in 2010. The Finnish spend slightly more on clothing and footwear - 5% in 2009. These expenses grew regularly by

[6] Monthly earnings of full-time wage and salary earners by industry class and employer sector in 2009 - http://www.stat.fi/til/pra/2009/pra_2009_2011-04-08_tau_001_en.html
[7] Income of households and low income earning- http://www.stat.fi/tup/suoluk/suoluk_tulot_en.html
[8] Gospodarka Finlandii. Podstawowa charakterystyka - http://helsinki.trade.gov.pl/pl/finland/article/detail,233,Gospodarka_Finlandii.html

0.1% in the following years. In 2010, level of 5% was maintained in this expenses group. The expenditures on health amounted to 4.5% in 2009 and 4.6% in 2010, but in the previous years they were much lower, which leads to the conclusion that despite the recession in the analysed period of time, the Finnish did not scrimp on their health. Another position of expenses in 2009 and 2010 is communications - 2.2%. This is where the savings of Finnish households are most visible. Throughout five consecutive years these expenses show a clear declining tendency - in the analysed period of time they fell by 1.1%. in 2009 and 2010 was maintained level of expenditures on education - 0.5% and 0.6%. Expenditures on other goods and services balanced on 9.2%, which was also lower than in two-three previous years, and fell by 0.7% year-on-year.[9]

This was the nominal spin of consumption. The table below presents real changes expressed by means of Consumer Price Index, allowing to illustrate inflation.

The above mentioned calculations contain basic prices as of 2005.

Table 3. CPI changes in groups of goods in services in 2006-2009 (2005=100)

Groups of goods and services	Percentage annual change of CPI				
	2006	2007	2008	2009	2010
Total CPI for goods and services	1.56	2.51	4.06	0.00	1.22
Food and non-alcoholic beverages	1.36	2.07	8.59	2.02	-3.59
Alcoholic beverages, tobacco	0.93	1.37	5.54	8.13	4.24
Clothing and footwear	-1.76	0.34	0.45	0.60	1.36
Housing and energy costs	4.42	5.44	5.53	-2.65	2.14
Furnishings, household equipment and routine maintenance of the house	0.64	1.29	1.69	1.92	1.96
Health	0.48	-0.41	1.62	3.42	1.89
Transport	2.28	0.50	2.56	-3.10	4.43
Communications	-7.78	7.04	-1.36	-5.45	-1.86
Recreation and culture	-0.16	-0.04	1.36	1.62	0.92
Education	1.83	3.66	3.34	3.63	4.75
Restaurants, cafés and hotels	2.07	2.39	5.53	4.26	1.00
Other goods and services	3.09	5.67	4.15	-3.31	-0.07

Source: Consumer Price Index 2005=100, http://pxweb2.stat.fi/Database/StatFin/hin/khi/khi_en.asp

Figure 1 (p.49) presents percentage changes of total CPI for goods and services in years 2006-2010.

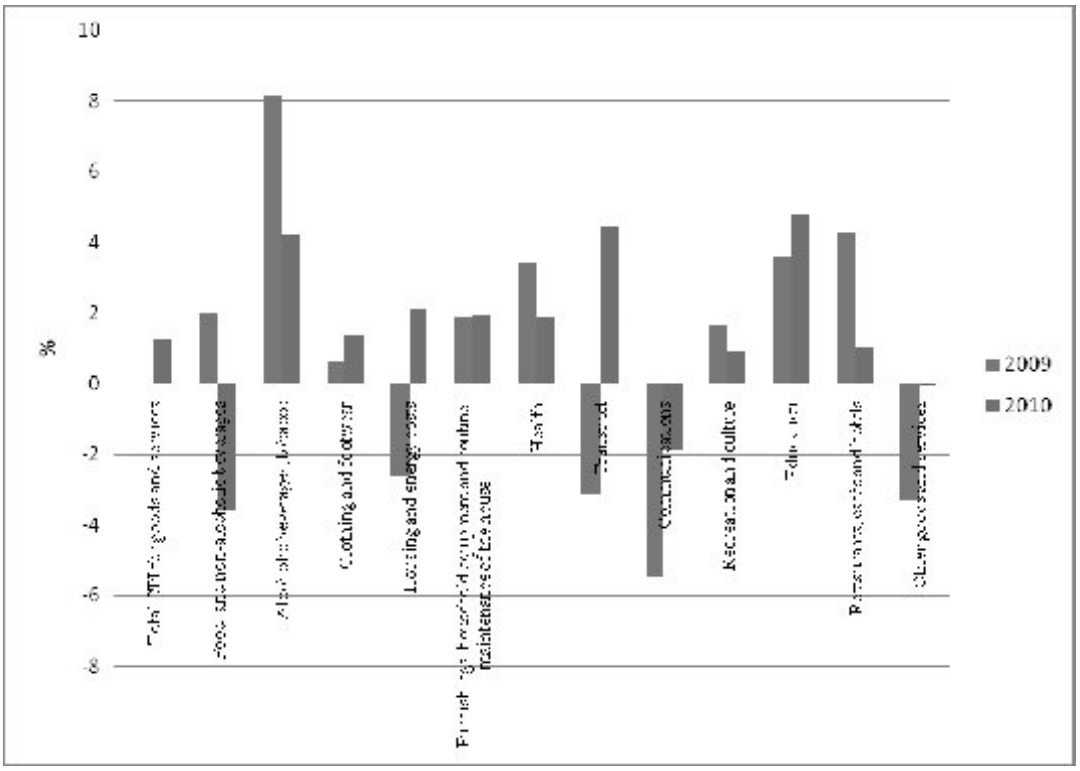
CPI changes in total goods and services attest persistent pattern of inflation - not exceeding 5%. Taking into consideration total goods and services, inflation amounted to zero in 2009. In 2010, unfortunately, failed to maintain this level, but inflation was relatively low - 1.22%. Yet earlier, the increase of the average level of goods and services prices was higher by the year - from just under 2% in 2006, almost 3% in 2007, to over 4% in 2008. A closer examination of particular groups of goods and services indicates the largest in 2009 increase of alcoholic beverages and tobacco prices - as much as 8.13%. In the earlier years the price rise was not observed in this area. In 2010, the price of these products also increased most significantly, but this time by 4.24%. Also, the prices of restaurants, cafés and hotels increased noticeably in 2009 (4.26%). The prices of these services rose in earlier years as well, yet the rise in 2009 was lower than in the previous year (5.53%). In 2010 there was a continued increase in the prices in restaurants, cafes and hotels by 1%. Educational services were more expensive in 2009 (3.63%), yet the annual price increase in this field remained on a similar level for three years. But in 2010, the appreciation of these prices was up by 4.75%. Also health services surged twice year-on-year (3.42% in 2009 and 1,89% in 2010), whereas three and four years before these prices were observed to fall. The prices of food and alcoholic beverages rose by 2.02% in 2009, but this rise was fourfold lower than a year earlier (8.59%). So, interesting is the fact, that in 2010 food grew cheaper as much as 3.59%. The furnishing, household equipment and routine maintenance of the house increase

[9] Household expenditure -http://www.stat.fi/tup/suoluk/suoluk_tulot_en.html

continued in 2009 - the annual change year-on-year amounted to 1.92%, comparably to earlier changes. A slightly greater increase in prices in this area occurred in 2010 - about 1.96%. A similar situation was observed in recreational and cultural services - the price rise in this field was 1.62% in 2009 and was the continuation of the earlier rise on a slightly lower level. In 2010, those prices increased only by 0.92%. The lowest rises in 2009 were noticed in the case of clothing and footwear - 0.60%. Also, in two earlier years a small-scale price increase was observed here. Unfortunately, in 2010 there was a more significant increase in the prices of clothing and footwear - about 1.36%. Among products and services groups where price decreases were noticed, the greatest ones in 2009 referred to communications - 5.45%. In the previous year they fell threefold less. In 2010, prices fell also in communications - with 1.89%. A relatively great price fall was observed in 2009 in 'other goods and services' - 3.31%, whereas in the previous three years the prices rose annually from 3 to almost 6%. In 2010, the decline in prices was still observed, but only at the level of 0.07%. Interesting situation was noticed in the case of transport prices - they fell by 3.10% in 2009, whilst in the previous years they rose from 0.5 to almost 3%. In 2010, in this group was one of the biggest price increases - about 4.43%. The lowest price decrease occurred in the group 'housing and energy costs' - by 2.65%. It was also a one-time drop in prices. Interestingly, in the previous years relatively great price rises were observed in this group - to almost 6%.

The chart below shows price fluctuations in individual product groups only in 2009-2010 years on the basis of percentage changes in the CPI.

Figure 2. Price fluctuations in the individual product groups in 2009-2010 on the basis of percentage changes in the CPI (2005=100)



Source: Consumer Price Index 2005=100, http://pxweb2.stat.fi/Database/StatFin/hin/khi/khi_en.asp

The changes in goods and services consumption (sometimes very violent) can be attributed to the fact, that since 2008 the Finnish economy suffered from recession caused by the global economic crisis. Bouncing off the bottom of the recession caused significant turbulence, especially with regard to changes in the prices of individual product groups. Retrenchment is mostly observed in the consumption of those goods and services which are not essential. The economy in analyzed period, presented the first symptoms of economic recovery and optimism increase, which should alter into the improvement in the field of goods and services consumption in the following years. Relatively low

inflation, low interest rate and labour market situation improvement (after a period of recession, the company stopped redundancies and increased employment)[10] will most probably translate into individual household buying power and consumer confidence index further increase.

Monika Szyda

[10] Ogólna sytuacja gospodarcza Finlandii w 2010 roku - http://helsinki.trade.gov.pl/pl/finland/article/detail,1634,Ogolna_sytuacja_gospodarcza_Finlandii_w_2010_roku.html

Pomorskie Region development strategy in the context of the sustainable transport paradigm

Abstract

Sustainable transport management is a great challenge for the EU, national and regional authorities. The implementation of the ambitious goals presented in the updated EU White Paper seem to be unrealistic to be achieved by 2050, unless the public authorities take urgently the necessary decisions. Thus, the activity of the central, regional and local authorities is of a great importance during the implementation of the adopted development strategies and programmes for transport investments. Despite the declared willingness to pursue sustainable development at the level of operational documents drawn-up by the government administration, in Poland the most funds are allocated to road infrastructure. This is also the case in the Pomorskie voivodship, although environment-friendly projects are given more attention due to the coastal location of the region. Based on the available strategic documents and other data, the paper presents the sustainable transport development prerequisites in Poland at the example of Pomorskie region.

Introduction

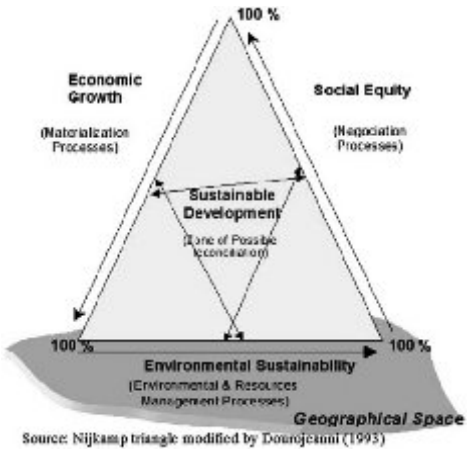
From an environmental and social point of view, the failure to unhitch growth in transport from growth in GDP is an extremely worrying tendency. The development of road traffic, prompted by new strategic choices by companies geared towards flexibility, just-in-time production and ease of operation by employing a cheap, flexible workforce, poses serious threats in several respects, including congestion, emissions of CO_2 and micro-particles, and safety. Public authorities should support greater use of public and non-motorized transport and promote an integrated approach to policy making including policies and planning for land use, infrastructure, public transport systems and goods delivery networks, with a view to providing safe, affordable and efficient transportation, increasing energy efficiency and reducing pollution, congestion and also adverse health effects. The sustainable development is a development that meets the needs of the present without compromising the ability of future generations to meet their own needs (Brundtland Report). The EU is one of the most active promoters of this idea. One of the biggest challenges, especially for the new members, like Poland, will be the assurance of sustainable transport development, according to the very ambitious guidelines drafted in the latest EU White Paper on transport development till 2050. Based on the available strategic documents and other data, the paper presents the sustainable transport development prerequisites in Poland at the example of Pomorskie region.

1. Sustainable development paradigm in the EU transport policy

The idea of sustainable development contains within two key concepts[1]:

- the concept of needs, in particular the essential needs of the world's poor, to which overriding priority should be given; and

Figure 1. Sustainable Development triangle.



Source: Dourojeanni, A. 'Procedimientos de Gestión para el Desarrollo Sustentable: Aplicados a Microrregiones y Cuencas', Santiago: Instituto Latinoamericano y del Caribe de Planificación Económica y Social de las Naciones Unidas (ILPES). Documento 89/05/Rev1., (1993); Nijkamp, P, 'Regional Sustainable Development and Natural Resource Use. In World Bank Annual Conference on Development Economics', Washington D.C., (1990), p..10.

[1] World Commission on Environment and Development (WCED), 'Our common future', Oxford: Oxford University Press, (1987), p. 43.

- the idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and future needs.

It is possible to graphically represent (fig. 1 p..51) the achievement of sustainable development by the simultaneous attainment of three objectives: environmental and natural resource sustainability, economic growth and social equity.

The attainment of environmental sustainability refers to the balance between the human rate of use of the environment and its resources, with natural resources rates of growth and environmental resilience. In similar terms, the attainment of economic growth is related, among other things, to the generation of employment, food, income and wealth (net economic benefits). Social equity refers to the need to give due consideration to the need to generate equal opportunities among people (generational, gender, cultures) to have access to the natural resources base for its use and to the wealth generated. Therefore, the attainment of sustainable development implies the balance between these three objectives or, in other words, to their simultaneous achievement.

As it has already been mentioned, the EU is one of the most active promoters of this idea of sustainable development. Thus, in its transport policy the EU aims at changing the demand pattern through shifting potential demand from the road transport sector towards the rail, inland waterway and sea transport short-distance shipping as well as promoting combined transport and collective public transport. Such solutions are more environmentally friendly, thus helping pursue sustainable development. The transport policy goals are based on two assumptions:

- mobility is the key to Europe's prosperity and the free movement of its citizens;

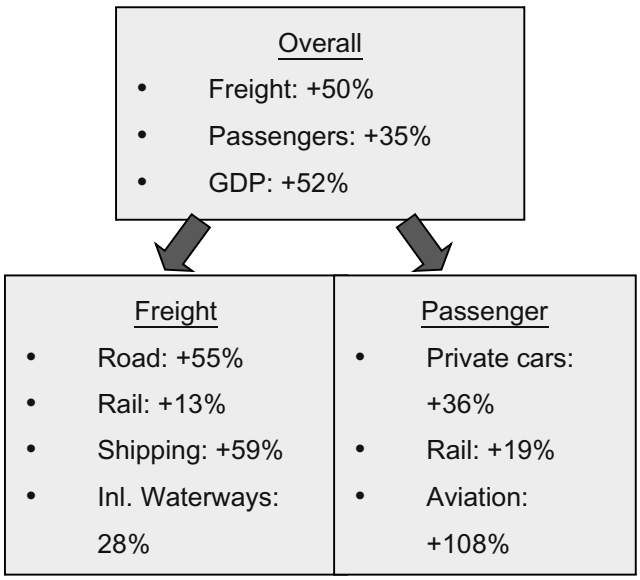
- the negative effects of this mobility, i.e. energy consumption and the impact on health and the environment, must be reduced.

As a result of currently formed modal split in the EU's transport sector, and as predicted realistically by 2020, there is no chance for any shift in it towards the more environmentally friendly modes of transport such as rail and inland waterways, reaching the set up transport policy's objective is thoroughly impossible. When this tendency is followed-up, sustainable mobility by still rapidly growing transport activity will even dash away. For, sustainable mobility this means disconnecting mobility from its many harmful effects for the economy, society and environment. Most likely 2000-2020 growth in transport demand in EU27 is presented on figure 2[4].

Recently, the EU has proposed a new document: Europe 2020 Strategy.[5] The Commission has identified three key drivers for growth, to be implemented through concrete actions at EU and national levels: smart growth (fostering knowledge, innovation, education and digital society), sustainable growth (making the production more resource efficient while boosting the competitiveness) and inclusive growth (raising participation in the labour market, the acquisition of skills and the fight against poverty).

In order to update the EU transport policy, the European

Figure 2. Most likely 2000-2020 growth in transport demand in Eu27.



Source: Grzelakowski A. S. G., "European greener mobility", Baltic Transport Journal, (2008).

[2] Communication from the Commission to the Council and the European Parliament, "Keep Europe moving Sustainable mobility for our continent. Mid-term review of the European Commission's 2001 Transport White Paper", Commission of the European Communities, COM (2006) 314 final, Brussels 2006.
[3] Grzelakowski A. S. G., "European greener mobility", Baltic Transport Journal, (2008).
[4] Ponthieu E., 'European Economic and Social Committee (EESC). Towards an integrated and coordinated sustainable logistics and transport policy for Europe'. Roma, (19 June 2008), p.10.
[5] Europe 2020 Strategy (COM(2010)2020, final.

Commission published a new document: WHITE PAPER 'Roadmap to a Single European Transport Area towards a competitive and resource efficient transport system' where a set of very ambitious goals have been presented to be achieved by 2050 (tab. 1[6]).

The goals of the former White Paper have not been fully completed. There is a serious risk that it is going to be the same in the case of the latest. The above presented goals will be very difficult to achieve, especially for such new EU members like Poland. It is necessary to adopt a high quality sustainable transport indicators monitoring system in order to better plan and manage the transport development[7].

2. Transport in the Pomorskie Development Strategy

The present condition of transport infrastructure in Poland does not meet the expectations of users of national roads, railways and other transport sectors. It also fails to provide appropriate handling of international cargo flows under the rapid growth in traffic, which has been observed for more than a decade. Furthermore, transport users have been increasing their requirements regarding the quality of

Table1. Ten goals for a competitive and resource efficient transport system: benchmarks for achieving the 60% GHG emission reduction target.

I. Developing and deploying new and sustainable fuels and propulsion systems	**II. Optimising the performance of multimodal logistic chains, including by making greater use of more energy-efficient modes**	**III. Increasing the efficiency of transport and of infrastructure use with information systems and market -based incentives**
Halve the use of 'conventionally-fuelled' cars in urban transport by 2030; phase them out in cities by 2050; achieve essentially CO_2-free city logistics in major urban centres by 2030	30% of road freight over 300 km should shift to other modes such as rail or waterborne transport by 2030, and more than 50% by 2050, facilitated by efficient and green freight corridors. To meet this goal will also require appropriate infrastructure to be developed	Deployment of the modernised air traffic management infrastructure (SESAR) in Europe by 2020 and completion of the European Common Aviation Area. Deployment of equivalent land and waterborne transport management systems (ERTMS, ITS, SSN and LRIT, RIS). Deployment of the European Global Navigation Satellite System (Galileo).
Low-carbon sustainable fuels in aviation to reach 40% by 2050; also by 2050 reduce EU CO_2 emissions from maritime bunker fuels by 40% (if feasible 50%).	By 2050, complete a Eur opean high-speed rail network. Triple the length of the exis ting high -speed rail network by 2030 and maintain a dense railway network in all Member States. By 2050 the majority of medium-distance passenger transport should go by rail.	By 2020, establish the framework for a European multimodal transport information, management and payment system.
	A fully functional and EU-wide multimodal TEN-T 'core network' by 2030, with a high quality and capacity network by 2050 and a corresponding set of information services.	By 2050, move close to zero fatalities in road transport. In line with this goal, the EU aims at hal ving road casualties by 2020. Make sure that the EU is a world leader in safety and security of transport in all modes of transport.
	By 2050, connect all core network airports to the rail network, preferably high-speed; ensure that all core seaports are sufficiently connected to the rail freight and, where possible, inland waterway system.	Move towards full a pplication of "user pays" and "polluter pays" principles and private sector engagement to eliminate distortions, including harmful subsidies, generate rev enues and ensure financing for future transport investments.

Source: WHITE PAPER Roadmap to a Single European Transport Area Towards a competitive and resource efficient transport system, COM/2011/0144 final - eurlex.europa.eu.

[6] WHITE PAPER Roadmap to a Single European Transport Area Towards a competitive and resource efficient transport system, COM/2011/0144 final - eurlex.europa.eu.
[7] Borys T., Pomiar zrównoważonego rozwoju transportu, [w:] Ekologiczne problemy zrównoważonego rozwoju, pod red. D. Kiełczewskiego i B. Dobrzańskiej, Wyd. WSE w Białymstoku, Białystok 2009.

transport services, in particular reduced transport time, improved safety and ensuring intermodality of the transport process. Significant decapitalisation of infrastructure facilities and equipment as well as not always appropriate spatial distribution of specific network elements may maintain or generate regional disproportions within Poland. Major infrastructural gaps can be found in all the transport sectors. Due to the absence of an appropriate network of motorways, express roads and high-speed rail system, the existing transport network structure does not contribute to the effective allocation of resources and does not ensure appropriate quality of passenger and cargo transport. Sea ports, inland waterway ports and airports should also be modernised.

There is a need for instruments increasing the innovativeness of technical solutions in the field of transport infrastructure and therefore providing a greater choice between various modes of transport. The routine approach to increase the number of roads and motorways, consisting in allocating most funds to these goals, contradicts the principle of sustainable development. After decades of intensive development of road infrastructure in the EU-15, for ca. 20 years a greater emphasis has been put on the improvement of the railway, inland and sea transport infrastructure. Similar observations can be made as regards the improvement of public transport systems in major European cities, used by a growing number of commuters who switch from passenger cars to public transport. Integrated regional public transport systems represent an EU requirement: Poland is obliged to implement this directive by 2013. The integrated regional public transport systems include integrated tickets covering all means of public transport, along with numerous systems of group, zone or time discounts encouraging passengers to choose public transport services. Such systems are also strengthened by the policy of imposing very high parking charges in the cities, or by locating parking lots for bicycles near train or underground stations. Such solutions are yet to be introduced in Poland. The maturity of urban communities and switching to integrated urban transport services will become a new qualitative factor affecting the structure of demand for transport.

In the its Development Strategy special attention is also given to sustainable development paradigm and transport on the level of ideological principles and general guidelines. The authorities of the Pomorskie region prepared this strategy until 2020, considering the social and economic situation as well as the SWOT analysis for the voivodship; the strategy aims at overcoming the weaknesses in order to make the best possible use of the opportunities. It is compliant with the strategic goal covered by the NSRF (National Strategic Reference Framework), envisaging the Pomorskie Voivodship of 2020 to be an important partner in the Baltic Sea region, offering a clean environment, high quality of life, development driven by knowledge, skills, active and open communities, a strong and diversified economy, cooperation based on partnership, an attractive and coherent area, conserving multicultural heritage as well as solidarity and maritime traditions. The implementation of this vision is based on three new priorities, strategic objectives and specific courses of action.

The voivodship authorities were obliged to develop a Regional Operational Programme for the Pomorskie Voivodship for 2007-2013 as an instrument for the implementation of the NSRF within the region and, at the same time, a document enabling EU support to be obtained under the Community regional policy objective "Convergence." The programme is in line with the provisions of the following:

- Development Strategy for the Pomorskie Voivodship,
- National Strategic Reference Framework,
- Community Strategic Guidelines on Cohesion.

The main development problem of the region is the low quality and limited coherence of the transport system. Despite the good location at the crossing of two transport corridors, transport accessibility of the voivodship is quite low against other central and southern regions of Poland and the EU. Western and eastern parts of the voivodship require the improvement of accessibility and quality of transport connections with the regional economic centres, mainly with the Tri-City agglomeration. The road network does not ensure good access to Gdynia and Gdansk ports. Low quality of transport infrastructure prevents appropriate quality of passenger and cargo transportation services. The current condition increases business costs, lowers the efficiency and competitiveness of companies, thus reducing the attractiveness of the region for foreign investors. It also has a negative impact on the residents' quality of life. The case of Pomorskie coastal region proves that it is necessary to diversify transport investments in order to ensure sustainable development, which could be fostered, inter alia, by integrated regional public transport systems. Partnership based on an extended and efficient institutional cooperation network, coordinated by voivodship governments and covering local and regional authorities, socio-economic partners, universities, business organisations, non-governmental organisations, government institutions, as well as other Polish and foreign regions and institutions, might also prove helpful in the sustainable transport planning and development implementation[12].

The overall strategic objective of the Programme is therefore the improvement of economic competitiveness, social cohesion and spatial accessibility through sustainable use of specific features of the potential. ROP financial instruments using the EU structural funds are shown in Table 2 (p.55). As shown in Table 2, the voivodship authorities intend to allocate the highest share of the funds (23%) for the development of the regional transport system, which may be regarded as a good decision since the transport system in the Pomorskie voivodship is inefficient. Major shares of the appropriations will also be granted to small and medium-sized enterprises (21%), basic local infrastructure (14%) and projects concerning the development of metropolitan functions (12%). A relatively small amount has been provided for tourism and cultural heritage (only 5%); the lowest share of funds was allocated for technical assistance (3%). The regional transport system (priority axis 4) in the Pomorskie voivodship will receive a total of EUR 271,420,167 (with the Community contribution of 75%). As regards other priority axes of importance to infrastructure development, the following are worth mentioning: axis 3 concerning urban and metropolitan functions (over EUR 150 million), axis 6 regarding tourism (almost EUR 60 million) and axis 8 aiming at the improvement of basic local infrastructure (more than EUR 145 million)[14]. A strong preference will be given to projects in line with the development programmes of the whole transport infrastructure system covering all sectors and following from the Transport Development Strategy of the Pomorskie voivodship.

ROP PV will be financed from the ERDF as well as with national funds, and the contribution from the ERDF according to Council

[8] Burnewicz J., Wizja struktury transportu oraz rozwoju sieci transportowych do roku 2033 ze szczególnym uwzględnieniem docelowej struktury modelowej transportu, http://www.mrr.gov.pl/NR/rdonlyres/, 2008-01-15, p. 5.
[9] Gończ E., Ulf Skirke, Hermanes Kleinzen, Marcus Barber, Increasing the Rate of Sustainable Change: A Call for a Redefinition of the Concept and the Model for its Implementation, ELSEVIER, Science Direct, Journal of Cleaner Production 15 (2007).
[10] Development Strategy for the Pomorskie Voivodship July 2005, www.woj-pomorskie.pl/downloads/ASRWP_tekst, 2007-08-09, p. 23.
[11] Ibidem.
[12] Parteka T., Przemysły morskie i infrastruktura techniczna w Strategii Rozwoju Województwa Pomorskiego do 2020 roku, (in:) A. S. Grzelakowski, K. Krośnicka (eds.), Przemysły morskie w polityce regionalnej UE, Gdynia Maritime University, Gdynia 2007.
[13] Development Strategy, op. cit.
[14] Ibidem.

Table 2. The structure of ERDF funds allocation by Priority Axis of ROP PV

Priority axis	ERDF funds allocation (%)
1. Development and innovation in SMEs	21.0%
2. Knowledge-based society	7.0%
3. Metropolitan functions	12.0%
4. Regional transport system	**23.0%**
5. Environment and environment -friendly power industry	7.0%
6. Tourism and cultural heritage	5.0%
7. Healthcare and rescue system	4.0%
8. Basic local infrastructure	14.0%
9. Local social infrastructure and civil initiatives	4.0%
10. Technical assistance	3.0%
Total	100.0%

Source: Own study based on: ROP (Regional Operational Programme) for the Pomorskie Voivodship 2007-2013, Annex to Resolution of the Pomorskie Voivodship Executive Board No. 75/18/07), 5.02.2007, p.. 64.

Regulation No. 1083/2006 was calculated with reference to the total eligible expenditure, including public and private expenditure. The amount allocated to investment will total EUR 1,227.1 million, of which the national public and private contribution will be EUR 240.7 million and EUR 101.4 million respectively. Almost half of the budget will be used for the implementation of the Lisbon goals. Other funds from other programmes under the EU cohesion policy, the common agricultural policy and national policies and strategies will also be of considerable importance.

Conclusion

Despite the declared willingness to pursue sustainable development at the level of operational documents drawn-up by the government administration, in Poland the most funds are allocated to road infrastructure. This is also the case in the Pomorskie voivodship, although environment-friendly projects are given more attention due to the coastal location of the region. In its Development Strategy there is quite a big number of references to the most important strategic international, EU and national documents. Special attention is also given to sustainable development paradigm and transport on the level of ideological principles and general guidelines of the strategy. At the same time, on the implementation level, there is a need to combine more the processes of extending necessary transport infrastructure with the rule of balancing development by seeking selective and optimal solutions at the level of region and at the local level. Other instruments include much wider application of the principle of genuine rather than only facade social participation in the decision-making on roads, motorways and other infrastructural lines, in order to balance the interests of local and regional communities and their development ambitions as well as taking account of environmental protection aspects in investment processes in a much more strategic way than it was the case in the past. Further decentralisation of the state and public finance, along with a more extensive scope of decisions taken at the regional level would also contribute to the harmonisation of investment activities and sustainable development challenges.

dr Adam Przybyłowski

Research papers: what, where, when, how to write

The researchers, including a majority of academic teachers, are assessed manly taking into account their research activity, and exactly, dissemination and citations of their papers. It is worthy to note that their teaching skills are assessed rather qualitatively, whether or not they prepare academic handbooks, new lectures, are they accepted by students or not, etc. The researchers are assessed quantitatively by a number of papers, impact factor of journals, number of citations, Hirsch index.

The strategy of dissemination of scientific results becomes slowly an advantage or disadvantage of any researcher. It is especially important for academic teachers who, on the contrary to their colleagues employed in research institutions, have to teach some 8 to even 20 hrs. weekly. Therefore, the choice of proper strategy is for this group of staff especially important and may be shortly expressed by: what, where, when and how to write.

What to publish

What should be written and published ? Generally one should not publish all what has been done: only those results which have been really verified and cannot be a base for future patents. And, after making a choice of the results to be disseminated as a paper, the manuscript has to be precisely planned and written. The rule is to put into manuscript only part of one`s knowledge and results which are necessary and new for any reader.

The paper must have a specific order. The first part is a title which should be comprehensive but self-explaining. The general titles must be avoided as they do not attract any attention of a potential reader and would not be then taken as a citied source. The simplest and mostly used for smaller papers are titles as "The effect of … A on B …". If paper is more ambitious, then the title can be more developed, for example "Phenomenon of …: role of factors …". The long titles are usually allowed but no recommended as they may be difficult to understand.

The next part presents authors. Attention: now it becomes very important and only such co-authors are allowed who have really contributed to the research and/or to the discussion of results. This contribution should be essential. For example, simple making a test is insufficient but elaboration of results could be a base. No authorship can be proposed for supervisor or a leader of the research project if he/she has not been involved as a scientist into this part. Therefore, many editing offices demand from authors the declaration that there is no so-called Ghost Authorship. On the other hand, nobody who has been really involved in a research and their evaluation may be rejected. It is now strongly recommended, and even it has to be done when one applies for a academic degree or title, that before starting a research to reach an agreement among the team concerning the real impact and contribution to the paper of everybody.

Then an Abstract becomes. The abstract is usually prepared as the last part of a paper. It is better to know that many people reviewing the databases simply look at three elements: title, abstract and conclusions; if they pay their attention, the paper could be read and citied in future.

The next part of the paper are Key Words. They are very important as they are a key for different web search tools. If key words are wrong, the paper would not be found.

The Introduction should be as short as possible. The best way is to begin with 1 2 sentences on general problem, then give the up-to-date state-of-knowledge based on papers published only in journals and during last ten years. The Introduction ends with a sentence like e.g. "The paper is aimed at …". It is better to know that a considerable number of Editorial Managers in JCR journals recognise the references which are outside those journals and as such they may or may be not accepted by Editorial Office. At least, one might be asked to explain why this reference is so important and cannot be substituted by another one despite whether such practice is really ethical.

The next part of a paper is Experimental, sometimes called Materials and Methods. The basic principle is: write all details which are necessary in order to repeat the experiment described in the paper. It means that even such details as a customer selling a material, software or type of equipment may play a role and should be given. However, recently just to keep some details for possible patent application, an information may be not so precise, e.g. one may write "a special chemical agent based on organic solvent and developed by the authors was used …". It is always better to put into this part the experiment design and statistics used.

Now the most detailed part, the Results, comes. Even if in some journals Results may be joined with Discussion, it is always visible and separated in this paragraph. The results are simply documentation of test. Frequently, authors made an error and show the results as figures and/or tables and again describe giving all numbers shown before. The best way is to elaborate the figures in 2D or 3D visualization; the table is necessary in relatively few cases, and plain text only just to say "the relation of A on B is shown in Fig. …". However, the text is important when one would like to summarise the number of results, as "Generally, the monotonous dependence of B on A was observed; typical example is shown in Fig …". Not all results must be shown; the paper length is often limited and there is an art to show everything in 6 pages so that a choice has to be made.

Discussion is a real appearance whether one is able to say what the results mean, what is their source, which relations can be proposed and whether are they significant or not. No difference, which area of science, all can be defined as a process, which then may be described by its determinants, mechanism and general model, physical, chemical, or economic, applicable to more processes with here investigated being as an example. The determinants are obtained by analysis; the mechanisms and models need synthesis so that both types of scientific approach are involved. The results say what has been obtained; the discussion why such results have been obtained. The weak side of many papers and a reason to reject them is a lack of the general synthetic approach.

Coming almost to the end of the paper, the Conclusion(s) is to be achieved. Even if sometimes the last part of the paper sounds "Summary and Conclusions", both parts should be distinguished. The discussion seems a difficult part to be worked out; the conclusion is the most difficult. It must describe not the results but indicate the crucial points of discussion. Generally, it can compose of some short statements; as recommended, not less than three and no more than seven (the reader would be confusing trying to find what are real main achievements among e.g. 14 sentences …).

Acknowledgments are often neglected. It is a wrong way as they are the best place to acknowledge for financial support, to give warm thanks

for technical assistance or for wise advice.

When the paper is finished, it is always fruitful to give it to somebody not involved in the research. This first reviewer could discover many no proven, unclear or meaningless parts.

Where to publish

The decision where to publish could be made before starting the writing of a paper. Each journal needs a specific structure and emphasis placed on issues consistent with its line. The title of journal may be sometimes confusing and therefore it is better to recognise on what problems the journal is focused on.

The general rule is to publish in almost all possible sources except those which do not really help to disseminate the results. Thus, the journal of so-called JCR list (Journal of Citation Reports or in other words Thomson Reuters list, previously Philadelphia journals), the journal outside the list but with Impact Factor (IF shows the frequency of citations), finally Polish journals from the Polish Ministry of Science and Higher Education list the greater number of points, the better. One would rather not take attention to no or low point Polish journals, foreign journal outside the JCR and with no IF, conference proceedings.

Absolutely the best are journals citied in JCR. It might be said that one should send a paper to the highly assessed (by the Polish Ministry) journal. However, it a lottery and in such journal the rejection rate may be very high, even 80%. There are different ways to win in this scientific competition but the best is that: one should start for highly estimated journal (e.g. 32 points), when rejected - send to another (e.g. for 27 points), and so on; what is important, almost each rejection gives the authors an opportunity to improve the paper based on reviewers` comments !

One may also apply for a paper to be published in a journal with IF but not listing by the Polish Ministry; only those journal, over 10,000, are assessed, which have been proposed for this by any researcher. They have also a great value; according to the last Ministry regulations, the IF is important for a person, and number of Ministry points only for a unit, e.g. Faculty or Institute, in terms of scientific category.

Finally, nobody should reject the possibility to publish in Polish journals. They give you some points but more importantly an opportunity to be recognized by members of the Polish world of science, who finally could be reviewers when anybody starts for a higher scientific degree or a title of professor.

When to publish

Of course, the answer might be: as often as possible. However, it is not true. At first, it depends on a significance of one`s results. The papers can be recognized as regular papers but also as short letters which simply communicate about new results without any serious discussing them. Nowadays, this form of a publications slow disappears and it is better to think only on larger papers; in high IF journals very large.

When considering the frequency, one must remember that all these papers, around the world, usually are prepared rather thinking of a scientific career of the author(s) than of a real dissemination of knowledge, regretfully. Nowadays there is a huge amount of journals with their number increasing very rapidly, especially as concerns open e-journals. From that viewpoint, if one would like to be certain when applying on a degree or title, he/she should publish one paper in the JCR list journal yearly. It is difficult, it`s true, so that this number in part can be substituted (but not totally) by more papers in another journals, patents and pending patents, implementation of innovations in industry, etc. Anyway, it should be tried.

Summarising, one publication each three months would be an aim. It is possible when a researcher works on different issues and wisely can cut their results. In other words, it is a problem of strategy, discussed in the last part of this paper.

How to publish

It might be said that everything has been already said about publishing the papers. However, all these efforts should be taken considering a writing strategy. Such strategy has to involve, at this moment, all estimators of the evaluation process of a single researcher. Let us then consider all applied measures.

The first is the Hirsch index. There are many similar indexes but this one is the most favourite one, not only in Poland, even if it is criticised. The Hirsch number shows the number N of papers of one author citied in N journals or issues of one journal. In other words, if somebody has 100 citations of one paper and only 2 of all others, he/she will obtain the H-index equal 2. And, if he/she has 100 papers and none of these is citied more than twice, the H-index will be again only 2. The H-index should be assessed by Web of Science (if by Google Scholar, it might be even 10 times higher !), so that only citations in JCR journals are taken into account. Thus, the proper strategy may claim: publish papers in such journals. One paper yearly means that you might have a chance to have H = 8 after 8 years.

However, it is only a chance. It is not enough that the paper is excellent. It (i) must pay somebody`s attention by brave ideas or even speculations, distinguished from others in this domain by issue, results or conclusions, and (ii) must be published in journals widely reviewed, indexed by many databases. An advice: even if Web of Science is officially acknowledged, one might always give all other indexes if he/she wants to.

The next important estimator is a number of citations without self-citations. Again, it includes the citations in JCR journals. But, the significance of journals is equal: one may increase this index by frequent publishing the papers in even low estimated JCR journals.

Finally, the important measure is an index which takes into account the number of papers, their impact factor and/or not the number of co-authors. It means that the strategy should (i) limit the number of co-authors but (ii) promote again publishing the papers in journals with high IF. On the other hand, it suggests to form small research teams composed of researchers able to work fast and efficiently.

Conclusion

The present Polish regulations are close to world trends in dissemination of scientific knowledge and in promoting of researchers. The recommended strategy is to focus on publishing the research papers of high or unquestionable scientific level, but which at first express the advanced even speculative ideas and solutions. It promotes the journals present in the JCR list, even if it means lower publishing frequency. It supports the team efforts with researchers working fast, able not only to make research but also to write the papers. It proves then both making a research and dissemination of results to the high Impact Factor journals are to have equal importance.

Andrzej Zieliński

Maritime commerce at the Indian Ocean and Somali piracy

Abstract

The Indian Ocean is of the busiest and most significant regions with intense commerce among huge economies of Asia China, India and Russia, Europe and both Americas. There are also countries rich in natural resources, such as oil and natural gas, important for undisturbed existence in the XXI century. At the same tame it is the region where piracy flourishes in the Gulf of Aden and the Horn of Africa because of Somali pirates, who became a real threat at the beginning of the 21st century to the safety of transport in the Indian Ocean. The article shows importance of the area in the international maritime commerce and illustrates the problem of piracy. It also tries to describe the necessity of fighting this problem more effectively in future.

Introduction

Globalization or in other words global economic integration is among the handful of organizing principles for contemporary international relations. Maritime commerce is now, and for almost all of modern history has been, the key to global trade and therefore to globalization.The global trade development caused that within the last 20 years, on the oceans, began to appear more and more all kinds of specialized vessels, such as oil and chemical tankers or intermodal containers, that carry a bewildering variety of goods (starting from weapons up to food supplies). The world today transports almost 90% of its all freight by sea, representing around 93,000 merchant vessels, 1.25 million seafarers, and almost 6 billion tons of cargo. Since the end of the Second World War, seaborne trade has doubled every decade. On average, it is estimated that at any time of a day travels more than 10 million containers around the world. The globalization of the world economy has been based on the operation of cheap, efficient, reliable shipping networks and anything that disturbs international shipping operations of every kind has its influence on the international seaborne trade, which is one of the cheapest ways to perform intercontinental transport of various goods including, energy products. Sea transport in the world primarily services:

- bulk: mostly of raw mineral materials, including crude oil, iron ore, coal, chemicals such as sulphuric acid, chlorine, liquefied gases and food: cereals, fish; containers with semi-finished products and finished products;
- containners with semi-finished products and finished products.

Although energy products are not the only cargo transported that way, they are certainly one of the biggest importance for uninterrupted functioning of developed but also developing countries. The diversity of the use of crude oil, which is the commodity of key strategic importance, accounting for over 34% of the world's primary energy consumption in 2010, has made this product in a short time the indispensable and essential means of development of economies of individual countries. Petroleum is today not only fuel for car engines, but above all this raw material is used in the production of all kinds of plastic goods, fertilizers or asphalt and indirectly in many others used every day by all people around the world.

To make this commerce easy flowing it is concentrated on maritime lines of communication, that usually are situated along the continent or in the most convenient regions. It also uses so called choke points to make sure that the journey is run in the shortest possible way. That can guarantee the acceptable timing for delivery all goods all over the world.

The Indian Ocean and its commerce

Maritime commerce in the Indian Ocean is a particularly important component of global maritime trade, which joins two or even three continents. Although it ranks only fifth out of nine regions (as classified by Lloyd's MIU in London) in terms of commercial shipping port call volume (the first three being northern Europe, the Far East and the Mediterranean/Black Sea), the Indian Ocean is an inescapably central feature of global maritime trade. The main routes connect the areas of extraction of mineral resources in Africa, Australia, the Middle East and China, with cheap processing areas in Eastern and Southern Asia, but also in Europe and the U.S. There are also located some largest seaports in this region such as: Chittagong, Djibouti, Mumbai and Chennai, Jakarta, Mombasa or Rabigh just to give a few names. In recent years the biggest turnover of the cargo was listed in China, which is associated with the intensive development of the processing industry in this country, whose products are shipped in huge quantities to customers for the most part by sea. Maritime Transport is as the basis for prosperity and economic success of many European countries, which trade with Europe very important in terms of security and reliability[4].

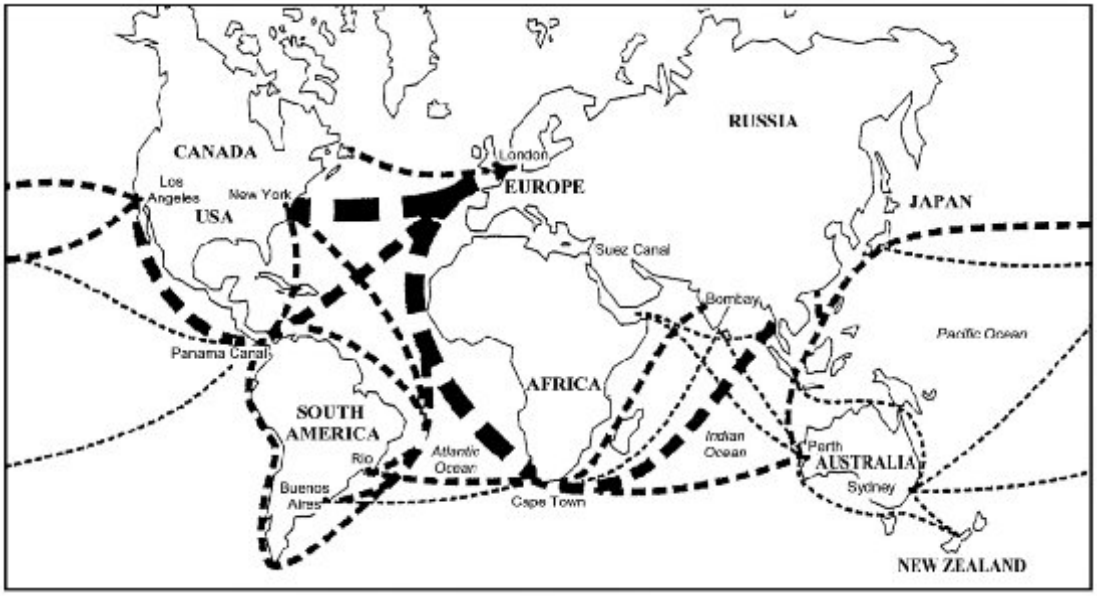
Region of the world	Loading [%]	Unloading [%]
Asia	40	55
North and South America	21	16
Europe	19	23
Africa	9	5
Oceania	11	1

[1] The economic costs of maritime piracy, One earth future paper, December 2010, http://oneearthfuture.org/images/imagefiles/The%20Economic%20Cost%20of%20Piracy%20Full%20Report.pdf, 30.03.2011.
[2] Review of maritime transport 2011, http://unctad.org/en/Docs/rmt2011_en.pdf, 18.10.2012, p. 13.
[3] J. Kujawa (red.), Organizacja i technika transportu morskiego, Wydawnictwo Uniwersytetu Gdańskiego, Gdańsk 2000.
[4] MaritimeTtransport Policy, European Commision, http://ec.europa.eu/transport/maritime/doc/maritime_transport _policy_en.pdf, 12.01.2010.

The contribution of various regions of the world in maritime transport is an example of the dominance of large, developing and emerging economies and reflects the concentration of natural resources and resource materials in different parts of the world. Asia is by far the most important region of loading and unloading, with the participation of 40% of the total weight of goods loaded and 55% of goods unloaded.

Growing import and export of goods from developing regions in Asia, is a reflection of a greater participation of countries in the region in world trade and the global economy, and this translates directly into greater demand for maritime transport. Clearly noticed low import demand in developed countries, after the crisis in 2008-2009 has affected the decline of their dominance in international trade. Shifting the centre of gravity of sea transport from developed to developing countries, is associated primarily with their rapid growth in the industry in the first decade of the 21st century. The transition from agricultural to industrial production on the global scale allowed for the inclusion of these countries to the global trade, increasingly involving them and contributing to the different geographical locations of the world's production processes. For example, the establishment of the world's largest distillate refinery in Jamnagar on the western coast of India, importing crude raw materials and exporting distillates.

To meet the delivery deadlines and minimize transport costs associated with many aspects: fuel needed to carry large amounts of weight of goods, the owners choose the shipping route as short as possible. It is also associated with attention to environmental protection through reduced shipping routes of ships and emission into the atmosphere the least amount of CO^2. These assumptions make that the most commonly selected routes are the shortest transport corridors, which very often run through choke points, straits and canals connecting the continents or seas. Particularly important is the selection of shipping routes in the case of transport of energy raw materials if the price of these raw materials is to remain at an acceptable level for consumers, although this is not the key element of the price. Changing the transport route or omitting some dangerous waters would mean a lot longer, and therefore more expensive travel for tankers, which transport costs, would increase significantly as well as the final price of the product.



The Indian Ocean and the commerce present there is particularly important in several areas: in volume, in the key resources and manufactured goods that it moves, and in the steadily expanding significance of the national economies that dominate its trade. These include East Asian economies, Indian Ocean littoral states, and those such as Europe, dependent on the Indian Ocean maritime trade. Even the United States and its American neighbors, most of whose trade with Asia traverse the Pacific, remain dependent on Indian Ocean trade by virtue of the dependence of their East Asian trade partners on sources of raw material transported across the Indian Ocean from East Africa, the Persian Gulf, South Asia, or Australia. The Indian Ocean is where the greatest and most rapid change has been registered in maritime commerce, including investment in ports and vessels, and the emergence of entirely new maritime commercial powers such as Singapore, the United Arab Emirates (U.A.E.), Qatar, and Saudi Arabia. The economic grow of Asia in recent decades has brought the Indian Ocean's seaborne trade in raw materials and finished goods into the center of the global economy, and Asian countries have progressively become commercial

[5] International trade, http://www.un.org/en/development/desa/policy/wesp/wesp_current/2012chap2.pdf, 12.02.2012, p. 44.
[6] Maritime Commerce and Security: The Indian Ocean, A. A. Pandya, R. Herbert-Burns, J. Kobayashi, STIMSON, February 2011, p. 19.
[7] K. Wardin, International maritime transport and costs of piracy, in: Zeszyty Naukowe AMW, January 2011.
[8] Maritime Commerce and Security: The Indian Ocean, A. A. Pandya, R. Herbert-Burns, J. Kobayashi, STIMSON, February 2011, p. 1.

and maritime powerhouses, beginning with Japan in the 1970s, and continuing with South Korea and China to the present day.

The countries mentioned above together with the northern part of the ocean, especially the Horn of Africa, are very important for maritime transport, particularly with regard to energy materials. The Horn of Africa is bordered by one of the world's most important sea routes: the Suez Canal, Red Sea-Gulf of Aden. It is estimated that each year by the Gulf of Aden with the area of 259,000 km² moves over 22,000 vessels. While throughout the whole Indian Ocean annually passes around 43,000 ships. This way is transported about 8% of all goods and 12% of crude oil transported by sea. 80% of all goods carried by the Gulf of Aden, the Strait of Bab el- Mandab, the Red Sea and the Suez Canal are carried to or from Europe, South Asia, the Far East and Eastern Africa. On the other hand this region, due to the historical circumstances, is also very unstable politically; therefore ensuring the safe transport of oil and its products is the major challenge for the entire international community.

Another important region in the Indian Ocean is the Strait of Malacca in the area of the South China Sea with over 200 islands, the most vital communication artery of the region and the second largest in quantity of transported oil, in the world. The Strait of Malacca, which is about 402 km wide at its northern end, and 16 km to the South, separates the Indonesian island of Sumatra from the Malay Peninsula, on whose end is Singapore. Thought this narrow passage flows every year 70,000 of vessels, carrying one-fifth of the entire world's marine cargo. It is calculated that at least every second of all cargo ships in the world once a year flows through the Strait of Malacca.

An understanding of the location of raw materials and mineral deposits within the Indian Ocean region helps to form the geo-strategic picture of the region by establishing the locations and typologies of strategically essential materials such as petroleum, uranium, titanium, iron ore and bauxite all of which are vital for industrial production.

The Indian Ocean comprises a diverse collection of 36 coastal states, which between them have 35.39% of the world's population, but generate only 10.003% of global GDP. With a total surface area of 73,556,000 km² the Indian Ocean is the third largest of the world's oceans. It comprises some 20% of the total water surface area of the planet. The parameters of the study are bounded in the north by the Indian subcontinent; to the west and northwest by the east African coast and Arabian Peninsula respectively; to the east by Thailand, the Malay Peninsula, Indonesia, the Sunda Islands, and Australia; and, to the south by the oceanic margin with the Southern Ocean at latitude 60° S. At the same time, the Indian Ocean is the region of increased activities of modern maritime piracy rooted in weak of even failed countries such as Somalia.

The problem of Somali piracy

Piracy is an activity known and grown for thousands of years. At present in many parts of the world it is treated as a type of legacy or rather part of tradition and so, also gladly continued by the population who is experiencing poverty and hunger. Modern day pirates are particularly active in the regions in the waters of the intensive transport by sea. Piracy for many years was treated as an individual problem of each country the coast of which it existed, and it was not considered as a serious threat to a maritime transport. Such an approach of communities and international institutions to this issue for many years caused the negation of this problem and treating the difficulty as not the most important one. The problem is not equally the same in all places where piracy flourishes in the XXI century. Generally speaking we can distinguish five most dangerous regions in the world, which are really infected with pirates' activities and it influences maritime transportation in a great matter. These are the following:

1. The Horn of Africa, the Gulf of Aden, and eastern coasts of Africa;
2. The coast of south-east Asia and northern coasts of the Indian Ocean;
3. Western coasts of Africa;
4. The coast of Peru and Brazil in South America;
5. The the Gulf of Mexico.

Two out of five regions are within the waters of the Indian Ocean (1, 2), which make this area above all dangerous and of special attention in terms of security of the sea lanes of communication.

One of the reasons for piracy pointed by many experts is a marked difference today, that the capacity or willingness of the states where vessels are owned to protect them, has diminished considerably. Whereas in the past the country of ownership would have also been the vessel's flag state, that is hardly ever the case today. The high likelihood today is that a large, sophisticated, well-funded vessel is registered in a “flag of convenience” state that has poor capacity to offer sovereign protection. Indeed, it is precisely state weakness (to regulate) that has recommended these “flags of convenience.

Another important issue is played by favorable geographical position (numerous islands, bays, swamps) and the fact of the existence of important maritime communication lines, the weakness of coastal states' structures (the creation of new states, the lack of law enforcement). But probably the most essential factor responsible for the existence of piracy in some parts of the world is an approval and favor for the pirates on land. Local communities living almost on the verge of extension tolerate and accept any kind of making the living.

At the dawn of this millennium, the Strait of Malacca and the Bengal Bay gained the reputation as the most pirate-infested waters of the world, and the sharp rise in piracy there, was blamed on the Asian financial crisis of 1997. The two regions reached the highest peak in 2000 with 75 pirates' attacks in the Strait of Malacca and 55 at the Bengal Bay. There is consensus in the literature that economic crisis and political instability combined, to drive up the rate of piracy in the late 1990s. The Asian financial crisis put many coastal inhabitants out of work, and young men, with families to care for, had to look for alternative sources of revenue. For those with a background in the maritime trade industry or in fisheries, it was natural to look toward the sea for solutions, and when no legitimate ones were forthcoming, piracy seemed the most rational choice. Political instability in Indonesia was another major factor in the rise of piracy in Southeast Asia. When piracy in Indonesia hit record levels in 2003 (121 attacks), most of the culprits were believed to hail from the troubled Aceh province of Indonesia. Political instability, especially when it involves

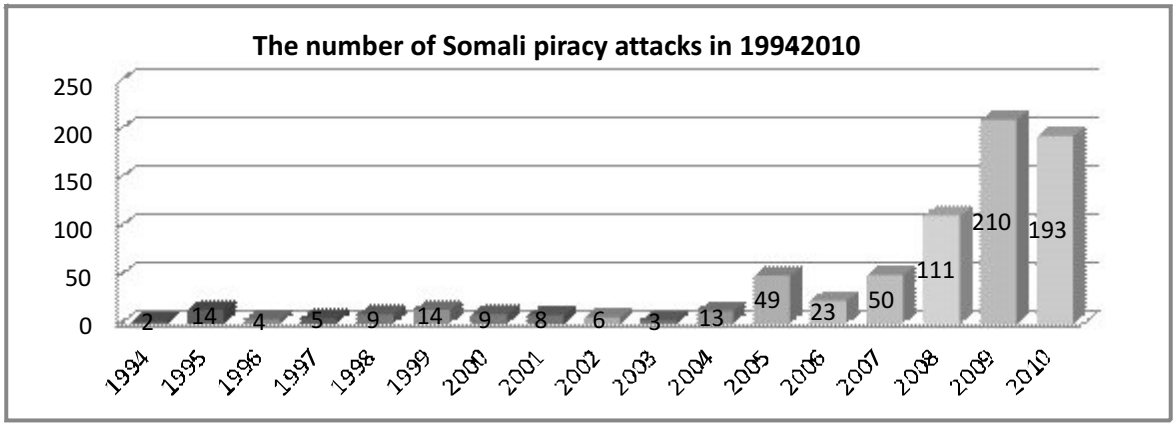
[9] IMO Report on Piracy in waters off the coast of Somalia, http://www.imo.org/TCD/mainframe.asp? topic_id=1178/, 10.03.2011.
[10] World Bank 2008 data and national and UN data sets.
[11] Maritime Commerce and Security: The Indian Ocean, A. A. Pandya, R. Herbert-Burns, J. Kobayashi, STIMSON, February 2011, p.35.
[12] K. Wardin, Maritime operation "ATALANTA" - the example of the effectiveness of the European Union activities in solving problems of falling states, Polish Political Science Yearbook, Adam Marszałek, Toruń 2012.
[13] Maritime Commerce and Security: The Indian Ocean, A. A. Pandya, R. Herbert-Burns, J. Kobayashi, STIMSON, February 2011, p. 2.

violent conflicts, provides pirates with the opportunity to acquire firearms easily, thus making them more effective at sea.

Piracy and armed robbery at sea occur in many parts of the Indian Ocean, and in some areas the problem continues to deepen. Indeed, piracy in the western Indian Ocean, specifically occurrences in the Gulf of Aden and off the Horn of Africa, now far outstrips occurrences anywhere else in the world.

Somalia has made international headlines for almost two decades, first as a place of civil war characterized by clan warfare and humanitarian catastrophe, then as a failed state, and finally as source of modern piracy. During August 2008, the frequency of Somali piracy exploded and the drastic increase in occurrence meant that waters adjacent to Somalia became the most pirate-infested waters in the world. However, Somalia as a country is not pirate infested; the pirates usually operate out of only several regions, using only certain ports to anchor their hijacked ships. The unique situation in the region meant that increasing, since 1990, the phenomenon of Somali piracy in 2008 was at the top of the international community interests, waking a lot of controversy, but also efforts to improve the situation. The presence of piracy along the coast of Somalia, which has 3025 km coastline, is not a new or unknown phenomenon, but from the fall of President Siad Barre in 1991, it has been a vital problem, which finally forced the international community to respond. However, one of the reasons for which it was unnoticed earlier, was the fact, that before 1991 in the IMB and IMO there were not functioning procedures of reporting accidents and piracy, so there is not much data from that period, and if so they point only the presence of the pirates in this region, but their activities did not bring much damage in relation to the traffic of ships. The IMO statistics, since 1985, mentioned very rarely piracy in the Horn of Africa. This allows the conclusion that Somali piracy never was a major problem in this region until 1991. Virtually there were six attacks of pirates noticed, four in 1989 and two in 1991.

In the years 1991-2004 there was a noticeable increase in pirates' activities off the coast of Somalia. Practically non-existent in previous decades piracy, began to operate permanently in the waters of Somalia, becoming very burdensome but yet, not a constant threat in the 1990s. Although the number of attacks remained relative low to 2004, the attention of the international community was captured by the tactics used by pirates and the fact of using not only firearms, but also modern means of communication. Along with a typical robbery, the attention deserved the fact of crew kidnapping of captured units and ransom requests, as well as systematic active use of firearms. Possession of weapons by pirates was the consequence of chaos reigning on land as well as easy access to former government supplies of weapons.



Victims of attacks were practically all units without special preferences in connection with their type. No matter which way the pirates were getting on board, whether pretending the coast guard of Somalia or using force, the effect was mostly the same, and so the crew had stolen private property and cash. If the conditions were favorable the unit was hijacked, then held until the payment of the ransom by the ship-owner.

In 2004, however, the situation showed a deteriorating trend, and it is not in the terms of frequency of attacks, but rather in the organizational structures of the pirate groups. Piracy evolved from random attacks at sea carried out by armed groups of the clan, to the thriving business much beyond clan relationships. Still addicted to local warlords in the aspect of protection, pirates in the new business model have invested in better, faster boats, with stronger engines but also training. The promise of easy profits made new recruits coming from all over Somalia and different clans. This reorganization created the foundations for rapid flourishing of the phenomenon of piracy, creating a self-sustaining system, in which profits were invested in further potential attacks to create a well organized and thriving institution.

From 2005, each subsequent year, with the exception of 2006, brought every year, doubling the number of attacks. The reason for the drop in the number of attacks in 2006 was coming to power Islamic Courts Union (UIC) in Somalia. The Union won control over the capital of Mogadishu and most of southern Somalia. By June 6 2006 the Islamic law was introduced and so relative order with stability. The UIC also addressed the problem of piracy, and for the first time in 11 years the port

[14] Reports on Acts of Piracy and Armed Robbery against ships, Annual Report 2008, International Maritime Organization (2009) MSC.4/Circ.115

of Mogadishu was opened. But the problem of piracy was just tackled but not solved and when the UIC were crushed the piracy emerged immediately.

Year 2008 marked the biggest increase in the pirates' activities, hampering at the same time very intense maritime traffic in the region. In this difficult situation the answer of the international community had to be strong and immediate.

On November 20, 2008, the United Nations (UN) Security Council adopted a resolution that called for those states having the capability to do so to deploy warships and aircraft to the effected region to actively combat the threat of piracy the Gulf of Aden and Horn of Africa. The resolution also acknowledged the existing efforts of the EU and NATO in this regard. On December 17, the adoption of UN Security Council Resolution 1851 enabled the implementation of tougher measures; allowing for the occupation of land and sea spaces in pursuit of pirates. These resolutions essentially gave full legitimacy to the various naval formations tasked with anti-piracy operations to take a far more determined approach to ensuring the security of merchant vessels operating in this dangerous part of the Indian Ocean. Though not deployed at the same time, and with varying size and numbers of ships, the following formations have been active in patrolling the waters in the southern Red Sea, the Gulf of Aden and the Somali Basin:

- Combined Task Force-151 (CTF-151);
- EUNAVFOR - Operation Atalanta;
- NATO's Standing Naval Maritime Groups 1 & 2 (SNMG 1 & 2) Operation Ocean Shield;
- Navies of Russia, China, India, Japan, South Korea.

Regardless of whether individual states function under the operation EU NAVFOR ATALANTA, NATO operation OCEAN SHIELD, under operation CTF 151 or send their ships individually, they contribute to ensure safety in maritime transport in the region, as well as to restrict Somali piracy. Thwarting dozens of Somali pirate attacks weaken they their potential and although stopping the pirates not always ends up placing them before the Court, the weapon they posses, is always confiscated. Since the beginning of the operation, that is, for a period of 36 months, the forces of operations and individual countries safely escorted more than 8230 units. Given that each year the Gulf of Aden crosses about 22 thousand units it can be assumed that within 36 months this was about 68 thousand vessels from which about 12% were accompanied by warships of the aforementioned countries.

All activities constitute a significant contribution to ensuring the safety of maritime transport, but unfortunately do not affect the change in political, economic and social situation in Somalia anyway, so these actions, albeit expensive, do not contribute to combat the roots of piracy but just try to counteract temporarily in the region. Forced by piracy the involvement of international organizations and individual states generates various types of costs borne by the international community in order to reduce and eradicate piracy, in addition to meeting the expenses associated with the detention of pirates and lawsuits. In the case of the renaissance of the analyzed phenomenon numerous organizations, operating internationally, were formed and many programs created, aimed at publicizing the problem of piracy and motivating to take action for the benefit of its reduction, as well as dealing with the wider relief aid to people who have experienced hijacking and also for their families.

The total costs of piracy in 2010 and 2011 are thus estimated to be over $23 billion, respectively almost $14 billion in 2010 and $9 billion in 2011. They include all the costs of naval military operations and other navies operating in the region, costs of seizing, taking to the court and deterring pirates as well as the costs of increased insurance premiums, ransoms paid, the excess cost of re-routing ships, deterrent and security equipment costs and work of a number of intergovernmental organisations. As mentioned the cost were estimated for two years only, but piracy was the case of international intervention in the year 2008, so taking average costs would mean that every year international community spends 10 billion counting up to over 30 billion a year to prevent maritime commerce from piracy threat.

There are also secondary costs, which involve generally the losses of neighbouring countries, particularly Egypt, Kenya, Yemen, the Seychelles as well as India. The region's fishing industry has also been affected. Tuna catches in the Indian Ocean are reported to have fallen by 30% in 2008, in part because of fishing vessels' fear of piracy.There is also the cost to food price inflation and the cost of reduced foreign revenue, which are rather difficult to count. Total secondary costs to regional economies were estimated to $1.25 billion a year.

Conclusion

The Indian Ocean is a particularly heightened and concentrated form of the global reality embodied in maritime commerce. It witnesses the transport of a very significant proportion of the world's trade. It simultaneously has a high concentration of the fastest growing economies in the world, a high concentration of the most politically unstable, governance-deficit and conflict-prone national polities, and a high degree of pre-existing international tensions, rivalries and conflicts. A greater proportion of the Indian Ocean than any other oceans is occupied by significant insular nations, some with significant populations, volumes of economic activity, global economic significance, sophisticated institutions, and influence in the community of nations. The key actors of the region and their economies will probably grow in the future and it will become important for them. The fact that the respective economic security, of e.g. China and India, is underpinned by the free-flow of trade (particularly petroleum) through the Indian Ocean means that these expanding powers have a clear interest in projecting naval power into the Indian Ocean to safeguard their interests, specifically the security of the sea lines of communication that connect the Persian Gulf with their most important petroleum terminals[19].

Eradication of piracy must be tackled in several ways by elimination of the procedure but also, which is even more important, by offering Somali pirates some alternatives, work opportunities, otherwise ex-pirates are likely to slip back into a life of maritime crime.

Without employing local institutions, authorities fighting piracy might be a very difficult, expensive and long process, and nobody can

[15] Maritime Commerce and Security: The Indian Ocean, A. A. Pandya, R. Herbert-Burns, J. Kobayashi, STIMSON, February 2011, p. 114.
[16] The economic costs of Somali piracy 2011, One Earth Future paper, December 2011.
[17] Maritime piracy costs global community up to $12 billion a year, www.eyefortransport.com, 22.01.2011.
[18] K.Wardin, Costs of piracy in the horn of Africa in context of energy products security, in: „Bezpieczeństwo w administracji i biznesie we współczesnym świecie", Vol. II, WSAiB, Gdynia 2011.
[19] Maritime Commerce and Security: The Indian Ocean, A. A. Pandya, R. Herbert-Burns, J. Kobayashi, STIMSON, February 2011, p. 115.

guarantee its success. The problem has gone so far, that at the moment international community has to spread money in two directions: on fighting existing piracy and rebuilding states causing piracy, particularly Somalia. These actions are definitely very costly but these are the only ways to solve this predicament for the future. Rear Admiral Michael McDevitt, Vice President of the CNA's (Centre for Naval Analysis) and Director of CNA Strategic Studies said in one of the interview for newspapers, that fighting piracy is one of the most important challenges facing maritime security and developments in collaborative activities among the major powers, especially in regions where the risks to sea-borne passage and global trade are substantial[20].

There is no single solution to Somali piracy, and solving the problem in such an important region is still grasping a lot of attention of the whole international community. On the other hand we have to be aware that European-founded operations to combat Somalia-based piracy could be hit by major public spending cuts [21]. Many countries in Europe have serious problems with constructing their budgets or are facing bankruptcy and extra money spent on piracy might be a difficult overweigh, impossible to bear for the next year or years to come. Although the financial situation and the whole word's economy seems to be in deep trouble at the beginning of the second decade of the XXI century, the community must find money to fight piracy in the region of Somalia and everywhere else if it happens to emerge. This is no longer a problem of particular country or region but it has become the common problem of our globalized world.

dr Katarzyna Wardin

[20] The challenges of maritime security, http://www.transportpolicy.org/the-challenges-of-maritime-security/, 04.04.2011.
[21] Cuts and counter-piracy, Safety at Sea, 13, November 2010, vol. 44 no 501.

Carry on leader!

Electric-powered car is a definite success of Gdynia Maritime University, but the country further projects are realized, the question of what to do to remain a leader

About electric car from AM can be heard since 2005, when the first demonstrator was based on the old Ford Escort - the effect of the final diplomastudent's work. National publicity has brought the achievements of university vehicles for the realization of a series of Mielec Regional Development Agency. Today you can test electric Fiat Panda, even in one of the showrooms in Gdynia. Despite the obvious advantages of electric vehicles, including low cost of "fuel" their universality and popularization is limited. This is mainly due to lack of infrastructure for rapid charging of these vehicles and the unit is still expensive prototypes that are beyond the reach of mere "blacksmith". Additionally, this car can actually be used primarily in a typical urban traffic and in Poland it is related to the cultural and mental barriers associated with owning a car. In addition, electric cars from 2011 are already offered by several global manufacturers such as Renault. This shows that the time of the transfer of knowledge from the academic laboratory to mass production of business has occurred. Regardless of whether corporations or smaller companies, "consume" technology developed in the AM or the other, time to take advantage of and maintain a leadership position. Aim - to hybrid vehicles. After the electric motor is a solution earlier than the internal combustion engine and the first hybrid car is already 112 years!

Scientific and industrial consortium whose leader was the Silesian Technical University, and members of the Academy of Mining and Metallurgy in Krakow, Centre of Military Production, HSW and Wasko company carried out the company for the amount of grants 5 300 000 PLN prototype tracked vehicle with hybrid called APG (Autonomous Tracked Platform) .

Fig. 1 Waskovehicle

The experimental work on diesel-electric hybrid propulsion system uses the best available platform in Poland excavator - car produced in HSW Steelworks Steel in years 1984-1994, the vehicle system based on a 16-ton carriage self-propelled howitzer 2S1 Pink. Building a demonstrator APG was made possible by grants under the development project of the Ministry of Science and Higher Education, No. A 0048 R00 05, realized in 2008-2011. The vehicle was originally driven by a 300-horsepower diesel engine, which allows reaching speeds of 60 km / h on road and 30 km / h in the field. The Silesian University of Technology project has developed and manufactured diesel - electric hybrid that contains electric motors with permanent magnets. Launched in autumn 2011, the demonstrator is equipped with an engine power of 220 kW and the electromechanical transmission and battery pack, as well as additional, specially designed for this vehicle, a generator of 145 kW of instantaneous power. The total engine power of 310 kW propulsion is in continuous operation or 470 kW of instantaneous power. With a gross vehicle weight of 16 tons capacity provides an indicator of 19.3 kW / ton (29.3 kW / t). Such power indicators provide good traction of the car such as the time to reach speed of 32 km / h rate of 5 s, and maximum speed Demonstrator 75 km / h (reached in the parallel mode, diesel-electric propulsion).

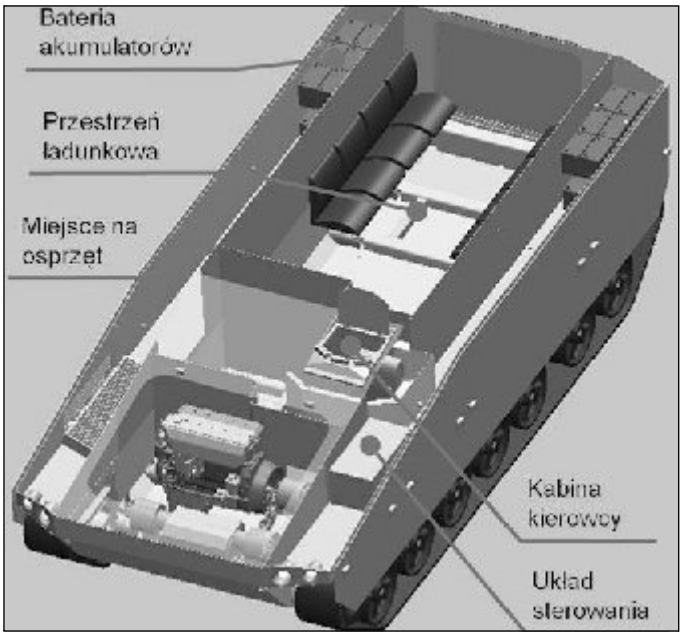


Fig. 2 Batteries and their arrangement

Hybrid values relate to particular maneuverability and agility in difficult terrain. Out of power is a basic example, AMV weak point in the Afghan terrain. This project is already reflected in the mass production. Bumar defense company announced the construction of an unmanned armored personnel carrier based on Anders tank, which is a universal platform for fighting with national experience in this field. Anders is an unmanned launch innovations in armaments group, remote programmed to destroy specific targets: fortifications and enemy hideouts and safe evacuation of the wounded and deliver supplies to the front line, is the latest idea Bumar to return to the forefront of innovative defense companies. "Do we start from scratch: unmanned vehicles designed primarily to transport military equipment has been constructed in Gliwice Research and Development Centre for Mechanical Appliances (OBRUM). Now turn to the draft BumarLabedy Mechanical Plant, electronics leaders from universities, research centers and private companies - said MariuszAndrzejczak, vice president of Bumar for

research and development. "

The use of hybrid vehicles increased mobility has slightly different substrate than for urban vehicles and is associated with:

Favorable torque characteristics of electric motors - mobility,

Significantly reduced fuel consumption (up to 30 .. 40%) - logistics,

Dual power source (electric motor and batteries or internal combustion engine) - the ability to survive,

Lower noise emissions, toxic exhaust components and smaller heat trace - environment/ ecology/ camouflage,

The flexible deployment of the teams in the vehicle drive system - ergonomics, balance,

Possibility of supplying arms and other equipment of electricity generated and accumulated by a generator on board the vehicle.

In the world for many years conducted research similar to those of Gliwice. In the U.S., working on a hybrid are associated with finding a convenient power source for a new generation of combat vehicles (so-called Future Combat System). American operating assumptions require that the system had a very efficient energy source that will provide more than average growth and to strengthen the extra equipment. It is assumed that the new vehicles will primarily be characterized by low fuel consumption, low weight and high maintainability. In the UK and South Africa's work focuses on hybrid vehicles with four-wheel drive transmitted by electric motors with permanent magnets placed in the wheels of the vehicle. German companies are involved in many development programs and hybrid electric drives for military and civil applications. One of them is an electric drive developed by the German 8x8 wheeled vehicle class 32t, with engines arranged in circles. The vehicle is powered by a primary engine power of 600 kW. Placing additional electric motors driving the wheels individually resulted in a significant reduction in the height of the vehicle and increase cargo space compared to the classic drive system. Addition, the study also inert energy accumulator. Maximum power inert batteries is respectively 500 and 900kW at a weight of 400 and 600kg. That's what those batteries were in the prototype hybrid combat vehicle to Marder. A vehicle with a mass of 30 t reached 72km speed / h Was powered by an internal combustion engine generator MB833Ea 500 of 440 kW of electric current, and each track tapes were powered by two engines of 8320 Nm of torque each. Electric motors were simultaneously brakes that provide energy recovery during braking.

Its own projects also run independently France and Sweden. Generally it can be stated that currently in the testing phase, there are two variants of hybrid: serial, parallel. This hybrid drive propulsion system, which work together two different sources of energy, or more generally different power source. Surplus energy generated by the combustion engine is used for charging batteries (electrochemical, hydraulic, mechanical, etc.). The accumulated energy is used to cover the energy demand auxiliary drive works with the main source of propulsion. Using this system allows the use of an internal combustion engine with less power, which is cheaper than the classic drive system. The internal combustion engine operates in a hybrid system for larger loads, because specific fuel consumption is reduced, the electric motor is used in the partial load range, eg, in traffic situations, in which the internal combustion engines have higher fuel consumption than the optimal conditions of combustion.

In a hybrid system serial engine acts as a generator which powers the electric motor and if you can also charge the batteries. The electric motor powers the wheels using power generated by the combustion engine and if necessary also from the power stored in batteries. This is called a serial system, because the power flow is in turn the elements. Serial hybrid engine requires low power, but a high performance throughout the range. In parallel mode the energy produced by the combustion engine is completely converted into electricity to power an electric motor, and its excess rechargeable batteries. If necessary, the electric motor can also use electricity

In the parallel hybrid, both the internal combustion engine and electric drive wheel, and power from both these sources is used in degree depending on road conditions. This system is called the parallel, because the power can flow simultaneously from two sources. In this system, the batteries are recharged by changing the operating mode of the electric motor of the conditions when the car brakes or engine power required is use to stop or reduce the seed. The parallel part of the mechanical energy produced by the combustion engine drives the vehicle, and the remainder charges the batteries. When you need a high power motors may be operated in parallel (total) as the source drive. During braking the electric motor is a generator of electricity.

The question is: what solutions they need today, potential domestic customers? Now to work on what and who to "ally" to maintain its position as a leading research center in this area? It seems that in a transitional phase between electric and internal combustion vehicles, taking into account fuel costs, the number of vehicles used and the area of use in a natural way is the economic needs of hybrid vehicle technology, high mobility, both in "production" and the "modernization 'existing fleet of owned vehicles.

Already in 1900, was the first wheeled vehicles with hybrid electric drive connects to the engine. The author of this solution was F. Porsche. The two electric motors placed in front of the vehicle wheel hub. The rear wheels were driven by internal combustion engine. The vehicle was called Semper Vivus (live forever).

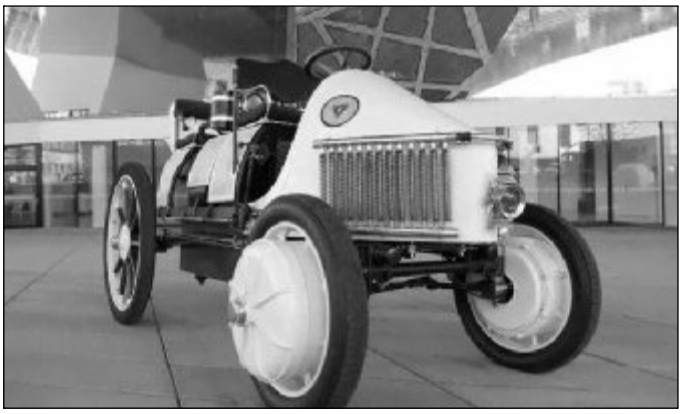


Fig.3 Porsche vehicle“Semper Vivus” from 1900

But it was not the first hybrid vehicle. The idea of combining to drive a motor vehicle internal combustion engine and electric motor for the first time in 1891, used to drive an American submarine builder Philip Holland. The original use of the hybrid drive in modern times was so ship and then the car. In a generalization, so it should not be surprised to construct a twenty-first century electric car by the Maritime Academy in Gdynia.

Hybrid drives have for years been used in locomotives on the American continent and ships need special maneuverability as tugs, pushers and ferries. Such an institution as the Maritime Academy in Gdynia, as with the staff, laboratories and many years of experience may well be tempted to create a theoretical model and a prototype hybrid car in collaboration with national companies.

Serial hybrid drive system already applies in the 30 century in the

German prototype tank VK 3001 (P) and later Tigger. Now in a fully modern form, but is unchanged at the idea of it applicable in the latest Audi A1 E-tron. To drive this model uses an electric motor with 45 kW. Cooperate with the lithium-ion batteries that are mounted under the floor and partially in the trunk of a total capacity of 12 kWh and weighing 150 kg. This solution provides a range of up to 50 km. But if such a distance was too small, it is still mounted in the trunk of the internal combustion engine that is able to provide electricity for the next 250 km. The unit is a construction rotary mower with a capacity of 254 cm3 (15 kW). The advantages of this engine are especially compact, quiet (low vibration) and lightweight design. The entire engine weighs 70 pounds and easily fits in the trunk of a small A1, leaving more space for luggage. The sign of the times in relation to the structure F. Porsche is on-board computer engine management. It operates with a GPS system. When we introduce a route for navigation, the computer will decide which moments of the generator (diesel engine) not to run out of energy by the target.

Fig. 4 Audi A-1

A completely new approach to drive all four wheels and a hybrid show off the Peugeot 508 model RXH, where the engine drives the front wheels and positioned in the rear of the vehicle the electric motor drives the rear wheels.

Possible variants of the hybrid-drive off-road vehicles are few and they have a long history. Poland is a need to develop such an optimal technology solution. So in order to maintain its position as a leading national center for design innovative solutions drive for wheeled vehicles is not it time to lean over the vehicle with high mobility hybrid? I think so.

In addition, the cooperation between universities and business, and while exploiting the potential of students today can begin work on developing a theoretical model of such a vehicle. This can be done on a "Magic Box", as they do Sony and other companies, or ask to model the scientific community, business and students. Access to the developed solution (property rights) are participants in the project. This allows for greater involvement in the project and facilitate the eventual creation of a consortium to build a prototype. The division of profits is the commercialization of technology - that is, placing it into series production. Business has a product, the customer - solved the problem, the university - another experience and scientific workshop, students - jobs after graduation, the wider economy - growth resulting from innovation and new technologies resulting from the transfer of knowledge.

Band together to build a theoretical model of hybrid vehicle, including the establishment of contacts with companies, potential clients and indirection faculty and students interested in a job for specialists from the Department of Enterprise AM in Gdynia. Later, in consortium with participants of this first step may be to lobby for funds to build a prototype. For most students to the next stage of implementation, the prototype of this went into production and thus they found employment and the opportunity to develop further the structure. Not without significance is the ability to call upon the assistance and expertise in this field of NGO's expert.

dr Radoslaw M. Tyślewicz

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