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TOWARDS QUALITY - MANAGEMENT SYSTEMS AND SOLUTIONS

EDITED BY TADEUSZ SIKORA & JOANNA DZIADKOWIEC

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Foreword

Under increasingly growing competitive conditions more and more enterprises look for new ways to gain competitive advantage in the market and new abilities to generate profit. The company management is also aware of the necessity to meet customer's expectations on which the organisation competitive position depends. Enterprises, wanting to keep present customers and to catch new ones, must take into account not only their own needs, but also at the first place those of their customers.

To gain competitive edge and to meet customer's requirements more efficiently, more and more organisations use solutions and systems that enable to gain customer's satisfaction and better market position. For years the certified management systems such as quality, safety, risk and branch management systems are trusted and enjoy popularity. However, in parallel some organisations are interested in individual management solutions that, if implemented, does not guarantee such spectacular effect as certification, but often they fit better to organisation specificity.

The monograph entitled **"Toward quality – management systems and solutions"** is a part of "Commodity Science in Research and Practice" series. The monograph contains articles that reflect various and multidisciplinary approach to quality creation and its objective is to present multidimensional nature of quality and customer-oriented management.

The monograph is composed of 18 chapters written by Authors from commodity science centres and their common feature is the orientation towards organisation management related to creating customer value and solutions that provide constant repeatable quality.

The monograph has been published to present a variety of approaches to management, innovative solutions used in various sectors as well to point out the significance of system solutions in different management aspects. Multicultural nature of the monograph is the high value, thus being a reference for practitioners and theorists of economic life. It is also valuable due to the fact that increasingly growing globalisation induces the necessity for knowing other cultures and adapting management methods to their specificity.

Tadeusz Sikora
Joanna Dziadkowiec

THE INFLUENCE OF HALAL CERTIFIED PRODUCTS IN ITALIAN FOOD MARKET

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Introduction

Purchasing decisions are influenced by several factors. Among the most relevant there are religious belief and identity, two aspects highly considered by Muslims people the world's second largest and fastest-growing religion. There is an increasing number of Muslims around the world asking for food, beverage, no-food products (cosmetics, drugs, etc) and services (hospital, tourist), complying with the Islamic law dictates that define what is permitted or prohibited. They use two opposite terms to describe products (food and no-food) and services in or out of their religious code: *halal* and *haram*. The first indicates what is permitted and the second what is forbidden. In general, the concept of Halal law has very specific purposes in order to preserve the purity of Muslim Religion and life, to safeguard the Islamic mentality and finally to maintain self-respect and integrity.

This religious scheme of life limits very much Muslims consumption mainly in food field. Muslims want to be sure that what they consume (what they eat) is halal without doubts. Linked to this starting point there are two main consequences. The first is that Muslims, especially whose living out of their origin countries, are obliged to reduce their consumes limiting in the same time their spending capacity; the second is that there are a potential consistent lucrative global market underutilized. It is estimated that the global halal market is growing mainly in the halal food sector, whose current value is approximately equal to 16% of the whole global food industry and in the near future, to 20% of total food world trade.

A World Halal Secretariat research highlights that the global halal products market is estimated in US$ 2,300 billion (not including finance and insurance sectors) of which food and beverages represent the 67%, pharmaceuticals 22% and cosmetics and personal care amounting to 230 US$ billion (Shabana 2013). One of the key factors contributing to this market growth is the increase in the Muslim population equal to approximately 1.6 billion representing the 25% of the total. The European Union (EU) is an

important halal market considering that the 7% (51 millions) of Muslims lives there especially in France, Germany and the United Kingdom. There are also substantial Muslim communities in Eastern Europe, specifically Albania (70% Muslim).

The objective of this paper is making a review of the different worldwide halal certifications and then to evaluate halal certification impact on Italian food market.

Size and profile of halal market and comsumers

Typical halal consumer is young with a good purchasing power. According to data availability, Muslims are younger than the general population 23 years versus 28. Variations are recorded in different world regions. In Europe they are 32 years old, 10 years less than global European population; in North America the average age is 26 years versus 37, in Asia and the Pacific 24 years versus 29, in sub-Saharan Africa 17 years versus 18 and in the Middle East and North Africa 23 years versus 24 (Pew Research Center 2012).

Table 1. Estimates of global expenditure of Muslim population on same markets most affected by religious drivers (based on 2012 data)

	Muslim consumers globally expenditure (USA billion $)	Percentage of global expenditure (USA billion $)	Countries with the largest sector expenditures (USA billion $)
Food	1,088	16.6	Indonesia (197) Turkey (100) Pakistan (93) Egypt (88)
Clothing & Fashion	224	10.6	Turkey (25) Iran (21) Indonesia (17) Egypt (16) Saudi Arabia (15) Pakistan (14)
Pharmaceutical	70	6.6	Turkey (10.4) Saudi Arabia (5.2 Indonesia (5) Iran (3.7) United States (3.6) Algeria (3.1)
Cosmetics & Personal care	26	5.7	Turkey (4.4) UAE (4.3) France (1.7), Russia (1.6) Egypt (1.6)

Source: personal elaboration by the authors on data Thomson Reuters 2013

The food expenditure of Muslim families is approximately equal to 30% of their income, a double percentage compared with a no-Muslim family (DagangHalal 2013).

Table 2 shows the distribution and level of expenditures in the most different world regions.

Table 2. Population and purchase power of Muslims

	Muslim Population (Million, 2010)	Per capita food expenditure (p/y US$ in 2005)	Halal Food Market (Million US$)
Africa	565.1	250	141275
Asia - Pacific	985.5	406	400113
Europe	43.5	1250	54375
North America	3.48	1750	6090
South America	0.84	500	420

Source: personal elaboration by the authors on data DagangHalal 2013

North America and Europe have the highest potentialities of enlarging halal food market. Moreover education, cultural and financial opportunities of these countries make them attractive for richer and more educated Muslims. So, they ask for products and services coherent with their religious and cultural traditions. The problem is that their consumes are conditioned by the two just mentioned terms “halal” – lawful – and “haram” – unlawful. A third word “mushbooh” – suspected – also influences purchase choices. If there is no certainty related to halal or haram status, the suspect prevails and it is better not to consume (Riaz, Chaudry 2004). Table 3 summarizes halal and haram food, beverage and additives in single and combined products.

These words are not valid only for food and beverage, as usually are considered, but for all that could be a hazard for the Muslim integrity, impurity and/or harmfulness. They are also important in non-food products including, drugs, cosmetics, utensils, fashion and clothing’s, shoes, animal and poultry feeds and packaging materials.

Moreover, it is significant to avoid that haram products contaminate halal ones. This means that halal products not only have to be produced according to Islamic law but they have to be safeguarded from haram products contamination during all their life cycle. The Rotterdam Port, for instance, is the first European certificated halal port fully complying with Islamic religious laws. The 3% of its capacity is utilized for halal products and, in 2005, Halal Audit Company (the Netherlands) developed a halal logistics handbook, including guidelines for suppliers, inspection, storage, packaging

Table 3. Halal and haram food, beverage and additives

Halal food and beverage	Haram food and beverage
Grain Products	
Rice; Pasta; Any grain product prepared without Haram ingredients.	Any grain products prepared with Haram ingredients (alcohol, animal shortening, lard or pure and artificial vanilla extract.
Vegetables and Fruit	
All vegetables and fruit: raw, dried, frozen or canned; All vegetables and fruit cooked or served with butter, or vegetable oils; All juices.	Any vegetables and fruit prepared with alcohol, animal shortening, bacon, gelatin, lard or some margarines which contain monoglycerides or diglycerides from an animal source.
Milk and Milk Products	
Milk from cow, sheep, camel or goat; Yogurt, cheese and ice cream made with bacterial culture or microbial enzymes.	Cheese, yogurt, ice cream, frozen tofu desserts made with animal rennet, gelatin, lipase, pepsin, pure or artificial vanilla extract or whey.
Meat and Alternatives	
Meat and poultry slaughtered according to Islamic dietary law; Seafood; Eggs; Nuts, seeds, dried beans, peas and lentils Peanut butter; Tofu; Halal deli meats.	Pork and pork products, e.g. bacon, deli meats, ham and sausage; Meat and poultry not slaughtered according to Islamic dietary law; Canned beans, peas and lentils containing pork; Any meat and meat alternative dish prepared with alcohol, pork products or animal shortening.
Other	
Beverages: carbonated drinks, fruit juice, punch, cocktails, tea and coffee; Fats and oils: butter, margarine, may, vegetable oils and some salad dressings; Miscellaneous: chutneys, coconut milk, jam, pickles, spices; Desserts made with agar and/or carrageenan base only; Sweeteners: honey, sugar, syrup, chocolate liquor.	Beverages: beer, wine, alcohol, liqueur; Fats and oils: animal shortening, lard; Miscellaneous: chocolates/candies made with alcohol or pure or artificial vanilla extract; Desserts made with gelatin; Sweeteners: chocolate liqueur (made from alcohol).
Combination Food	
Main dish entrées and soups/sauces: any meat slaughtered according to Islamic dietary law or alternative dish, pizza, pasta or rice prepared without Haram foods and ingredients; Desserts and sweets: any made without alcohol, or without pure or artificial vanilla extract or any other Haram ingredients.	Main dish entrées: any combination foods prepared with Haram foods and ingredients; Soups/sauces: any prepared with Haram foods and ingredients; Desserts and sweets: any prepared with alcohol, pure or artificial vanilla extract or any other Haram ingredient.

Source: personal elaboration by the authors

and transport (Tieman, Ghazali 2014). Halal products circulation around the world has created the halal value chain, with new sectors relating to halal logistics, halal security, halal storage, halal auditing and halal industrial development.

Halal certifications: state of the art

Halal certification originated in the mid ’60s in the United States of America (USA) where, same Muslim food and technical experts, tried to ensured to Muslims living in non-Muslim countries their proper religious and cultural beliefs. The technical experts wanted to guarantee that products produced out of Muslim countries were suitable to the Muslim world to preserve their identity (religious and cultural). In the United States, in accordance with Jewish community (which were working to enforce their religious requirements on products through a specific certification and accreditation called the “kosher”), Muslims established the first “halal logo”. From that moment, a lot of halal certificates (mostly for food and meat) have been available, each of them responding to different degrees of national and regional influence of Muslims groups (Sunnis and Shia) and/or Muslims school of thought (the Hanafi, Hanbali, Maliki and Shafie) (Nurulhuda, Nor Laila & Zainal 2014; Lever, Miele 2012).

Starting from this first form of certification a wide range of halal logos and halal certificates populate Muslim food global market and trade. The result is a lack of uniformity in the application of Islamic law prescriptions with an increasing of confusion and misunderstanding in their use between different countries but also within the same country. Single nation could have its own certification agency or agencies even if, more frequently, local government tries to control the halal certification procedure to support the increasing halal food and no food export.

In general, a halal food product certificate is a document issued by an Islamic organization certifying that the products (listed on it) meet Islamic dietary guidelines defined by a particular certifying agency. It is the prerequisite for entering the global halal market. Halal certificates may be issue for the registration of a *site* and/or a *product*. In the first case, it confirms that plants, production facilities, food establishments, slaughterhouses, abattoirs, or any establishment handling food has been inspected and approved to produce, distribute, or market halal food. In the second, the product halal certificate is related to a specific product and it has a specific duration. It means that a product meets the halal guidelines formulated by the referring certifying agency. This type of certificate, called batch or shipment certificates, may be issued for a limited time period or for a specified quantity of the product destined to a particular distributor or importer. Usually it is

utilized for meat and poultry products, for which each batch or consignment has to be certified. There is also a yearly certification that may be automatically renewed passing the annual halal compliance inspection and paying the certification fee.

Any individual Muslim and/or Islamic organization or agency can issue a halal certificate. Of course their acceptability depend upon the country of import. For example, there are more than 40 organizations that issue halal certificates in the USA but only five have been approved for instance by Indonesia. More diffused is the acceptability of halal certificate larger will be the possibility to export (Hanzaee, Ramezani 2011).

Currently, there are more than 120 active halal certifying agencies issuing halal certificates in the world and there are countries with no halal certifying agency. In 2009, data showed during the International halal market conference, highlighted that only 5 of 57 states (spread in four continents) belonging to Organization of Islamic Countries (OIC) have halal certification agencies, less than 25 have rules related to halal import and none has a domestic Halal Act. On the contrary, out of OIC, countries like United State of America (USA) and Australia have a defined halal related organization. Malaysia, Thailand, Indonesia, Singapore and Philippines have founded specific institutions concerning halal certification procedures (Afifi, Mahyeddin 2012).

As above mentioned the international halal panorama is too much populated by a lot of actors and procedures. What is not yet available but strongly required is a standardization of halal certification procedure. Producers ask a halal standard to make much more unambiguous their halal production and to enlarge their quota into the “lucrative” Muslim markets. Muslims want it to be sure that what is certificated halal in Europe is the same in Indonesia rather than in USA. Probably, to agree collectively to an unique global halal standard could mean for some countries to loose political and economic power.

It is long time since Muslim organizations are working to define a halal standard in order to organize a standard system to make “simple” the halal products circulation. In 1999 the World Halal Council (WHC) was established in Jakarta. WHC is a federation of halal certifying agencies and currently overseen 41 of them around the world and it is preparing a halal food standard. Also the OIC is engaged in this work and it has prepared guidelines on halal food for its members.

In this contest Malaysia plays a remarkable role. In Malaysia the government issues halal certifications, unlike in other countries where they are approved by their respective Islamic associations.

The Department of Islamic Development Malaysia (JAKIM) is the Malaysian authority allowed certifying the halal products and services and it

is included in Prime Minister Department. JAKIM handle the halal certification process for products for the domestic and international market. JAKIM's Halal logo is among the most widely recognized and respected symbols of halal compliance in the world. Nevertheless JAKIM authorizes various certification bodies from other countries, and it is also engaged in the development of international halal standardized laws and procedures. In the halal field, Malaysia is considered a halal hub in the Asiatic region.

In European Union, law probably due to the separation between Church and State does not protect halal and the halal logo even if EU is also very interested and engaged in this process. Of course in most European countries there are some private and independent certification agencies like Muslim Food Board and Halal Food Authority in the United Kingdom, Halal Food Council of Europe in Belgium, Halal Italy and Halal International Authority (HIA) in Italy and in February 2010 the European Association of Halal Certifiers was founded in Brussels. Furthermore, due to a continuously growing demand for a uniform Halal Standard in Europe, in 2012, European Committee for Standardization (CEN) created a new Project Committee CEN/ TC 425 Project Committee – Halal Food with the task of preparing an European Standard on halal food (Afifi, Mahyeddin 2012; van der Spiegel et al. 2010).

The following table (Table 4) summarizes different regulatory systems available in different countries.

Table 4. Different regulatory systems available in different countries

	Law system	Official standards	Certification (Government/Semi-government/Private)
Australia	Yes	No	Government-Private
Austria	No	Yes	Private
Brunei	Yes	Yes	Government
Canada	No	No	Private
China	No	Yes	Government
France	No	No	Private
Italy	No	No	Private
Indonesia	No	No	Semi-government
Malaysia	Yes	Yes	Government
New Zealand	Yes	Yes	Private
Philippines	No	Yes	Private
Singapore	Yes	Yes	Government

Source: personal elaboration by the authors on data Darhim D.H., 2011

Currently in a hypothetic pyramidal organization of international system of halal standardization, the base is too much populated but the level of accreditation and the top (International Accreditation Council) is still empty (Figure 1).

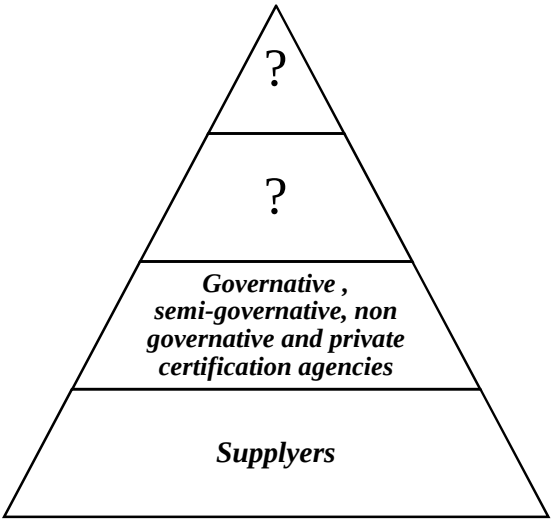

Figure 1. Current scenario for halal food certification

Source: personal elaboration by the authors

Halal certification in Italy

In Italy too, there is the same international situation. Since 2010, there are more than two international agencies recognized by different religious institutions accredited in different Muslim countries.

They are Halal International Authority (HIA) and Halal Italia. The first HIA is an international, non-governmental, independent organization recognized by Islamic States, Government agencies and non-religious organizations and halal consumer associations around the world. HIA operates as an authority for the halal certification of products and services and for the accreditation of institutions. It works also to improve integrated social, economic and commercial development. HIA is supported by the International Committee of Shariah (ICS) an independent religious committee that controls and supervises all the activities inside HIA ensuring compliance with the World Halal standards and the Scientific Committee whose activities are strictly related to the scientific risk assessment for each type of certificates. The latter also provides strategic advice to HIA and CIS on the definition and integration of some standards for certification. HIA halal certificates are recognized by the national halal certification agency, located in Indonesia (MUI), Malaysia (JAKIM), Singapore (MUIS), and the Muslim Judicial Council Halal Trust (MJCHT) located in South Africa.

Halal Italia is also a voluntary Italian certification organization for the most outstanding Italian products in conformity with Islamic law in the agricultural and food, cosmetics, health, pharmaceutical, finance and

insurance sectors. Halal Italia collaborate with the Ethical Committee for Halal Certification of Italian, to ensure a high level of reliability in the certification service. The Ethical Committee, an independent authority, issues the certificates, while the staff of Halal Italia carries out inspections on the premises of participating firms. During the 2010, an agreement with the Ministry of Foreign Affairs, the Ministry of Economic Development, the Ministry of Health, the Ministry of Agriculture, Food and Forestry and Halal Italia was signed and it is the first step towards an institutional and official acknowledgment of halal certification to support Italian productive system internationalization and to promote the "made in Italy" in Islamic market. Halal Italia certificates are recognized in the United Arab Emirates (UAE) and then in all the other countries of the Gulf Cooperation Council (GCC) countries such as Saudi Arabia, Kuwait, Qatar, Oman and Bahrain. Singapore authorities officially recognized the process for the accreditation of the Halal Italia brand. There are also other international cooperation with Islamic Food And Nutrition Council of America (USA), Halal Certification Center (Russia), Gimdes (Turkey), Halal India (India), International Halal Integrity Alliance (Malaysia). Currently in Italy there are more than 350 certified food companies and halal certification could really represent an opportunity to enlarge their business.

In the last years, final destinations of Italian exports have changed. Even if the best Italian customer is located in the UE-27, the closest non-EU European, North America and North Africa markets, increase their importance. In 2011, the EU total agri-food exports to third countries exceeded 100 billion of Euro recording an increase by 16.5% over the previous year (+15.9% for agricultural products and +16.6 % for processed ones). The recent and still ongoing Eurozone crisis, the weakness of the Euro against the U.S. dollar makes profitable exports to third countries. This is an interesting opportunity especially for those countries (Italy for instance) exporting mainly outside EU-27. United Kingdom (36.2% of its total export), France (33.5% of its total export), Denmark (32.8% of its total export) and Italy (31.8% of its total export) are the most important agri-food exporting countries in 2011. To increase extra EU-27 export is crucial because of decrease of EU demand. Muslim countries could be a good opportunity for Italy considering that more than 35% of food exported is represented by potential halal products like pasta, bread, bakery and pastry products (11.6%), fresh and dried fruit (9.5%), cooked vegetables and legumes (8.9%), milk (cow, sheep, goat) and dairy products (6.3%) (ISTAT 2013; ISMEA 2012).

The halal certification may be the right opportunity to reach new extra EU-27 markets where the Made in Italy is greatly appreciated without forgetting Euro weakness. Moreover, Italian food products have 264 EU quality schemes of which 160 Protected Designation of Origin (PDO), 103 Protected Geographical Indication (PGI) and 2 Traditional Speciality

Guaranteed (TSG). EU awarded them only to high quality products as a guarantee of the protected origin, the authentic taste, the typicality and the high physical-chemical characteristics (MIPAF 2014). If halal certification is added to UE quality ones the product could be a complete set of guarantee for Muslims and why not no-Muslims consumers.

Conclusion

In this paper a review of the different worldwide halal certifications has been presented. The main result is the common required of an international standard able to improve the circulation and the consumption of halal goods (food and no-food) and services. Halal certification is not a "simple" certification of quality but it is based on religious doctrine and, therefore, a connection with a recognized trustworthy Islamic authority is an indispensable indication of legitimacy and credibility. Since there is no single unified authority in the international halal panorama, differences still remain and this leads to different certification standards applied within and across countries and probably favouring the fraudulent use of halal certificates. Italy is also working with the international Islamic organization to achieve this important result to enlarge its market but also to improve its social and cultural integration with Muslims.

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THE ENVIRONMENTAL MANAGEMENT SYSTEM: A VECTOR FOR THE TERRITORIAL DEVELOPMENT. THE EXPERIENCE OF THE TOWN OF GIAVENO (ITALY)

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Introduction

Among the environmental tools that can be adopted by local authorities, in the past few years the Public Bodies have shown a growing interest in the application of the Environmental Management Systems - EMSs (Ridolfi, Andreis, Panzieri & Checcherini 2008).

The EMS started to be adopted *in primis* by manufacturing industries that since the 1970s, with the development of environmental studies and increased public awareness, had to question themselves about their relationship with the environment (Beltramo, Duglio & Bianco 2012).

Interestingly, in the previous years the environmental certification has become a useful tool for improving the environmental profile of a public administration and for giving proof of the efforts to preserve nature (Ridolfi, Andreis, Panzieri & Checcherini 2008).

There are two main tools used to plan an EMS: the ISO 14001:2004 international Standard and the European Eco-Management and Audit Scheme (EMAS Regulation EC N. 1221/2009) that have seen different trends of adhesion.

The Italian data show quite 20,000 ISO 14001 certificate sites (ACCREDIA 2014) and "only" 1,600 (ISPRA 2013), but as far as the different economic sectors are concerned, it is possible to note that in the ISO 14001

field the public administration represents 2.65% of all the certificate sites while in the EMAS context this percentage increased by more than 20 point (achieving 25%). The principal motivation should be investigated in the different level of communication: in fact, EMAS Registration requests the publication of the "Environmental report". For a local authority, this report can play an important role in encouraging private bodies to focalise their attention toward sustainability commitments (Petrosillo, De Marco, Botta & Comoglio 2012).

However, after the first revision of the ISO 14001 Standard, an EMS planned thanks to its application is able to consider both the direct and indirect aspects (ISO 14001 2004). As further proof of this last assumption, the EMAS Regulation officially recognizes the ISO approach and documental structure in its Annex II (EMAS 2009).

Methods

The project concerns the planning and implementation of an EMS for the Town of Giaveno. Among the different tools available, the Administration of Giaveno opted for the ISO 14001:2004 Standard.

The Town of Giaveno has developed several projects concerning the environment and the Administration felt the need to have a tool able to "systematise" the past and future experiences and give an updated and clear idea of all the actions and their interconnections. In addition, the Administration aimed at especially focusing on agricultural and local food products, which represent a fundamental character of this semi-rural area. In this general context, the ISO 14001:2004 Standard seemed to be the most useful and convenient tool.

In fact, the ISO 14001 sets standards for maintaining and improving the environmental performance of the organisations (ISO 2004) by the introduction of the Deming Cycle approach, divided into four phases - Plan, Do, Check and Act - under the umbrella of the continuous improvement concept (Salomone 2008).

The ISO 14001 Standard is divided in five sections. After the definition of an environmental policy, in the Plan phase the attention is paid to the evaluation of the direct and indirect environmental aspects and impacts and their relevance, the evaluation of the regional and national legislation and the identification of clear objectives and programme. The Act phase is dedicated to the implementation of all the necessary procedures in order to achieve the objectives afore-mentioned. The procedures involve the identification of roles and responsibilities (with the identification of an Environmental manager), training, communication, management of documents, operational control and emergency. In the Check phase there are all the necessary actions to verify the

correct implementation of the EMS in terms of performances, evaluation of the non conformances, corrective and preventive actions and records. Finally, the Act phase represents the stage in which the organisation's top management has to review the EMS and re-determine objectives and the environmental policy (Gonzáles-Benito & Gonzáles-Benito 2005).

This systemic approach (guaranteed by the ISO 14001:2004 Standard) has been evaluated by the Administration of the Town of Giaveno as the most reliable tool in order to start the process of the environmental management certification.

The case study

The Town of Giaveno is situated in the Province of Turin (Piedmont Region, in the North-West of the Italian Alps), 32 km from Turin. Giaveno represents the principal municipality of the Sangone High Valley.

The surface of Giaveno is about 78 km^2, 6,674 ha of which can be considered mountain (3,400 ha slope more than 20°) and 502 ha are composed of hills. The urban context of Giaveno is strongly fragmented because of the presence of 108 hamlets in which approximately 17,000 inhabitants dwell. As a consequence, the great majority of the area is dedicated to agriculture (92% - 6,634 ha) while the urbanised area consists of 7.175 ha, and represents only about 8% of the total. 74% of the agricultural areas is represented by woods, 18% is devoted to grazing, 6% is arable and only 2% (114 ha) contains unproductive lands (Town of Giaveno 2007).

The most recent Regional Censuses show a decrease in the number of farms of the Town of Giaveno that passed from 472 to 115, resulting in a total arable land of about 2,047.03 ha (Regione Piemonte 2014). The great majority of farms are family-run businesses and the 40% of managers are less than 39 years old. As far as the livestock is concerned, there are 67 farms, 46 of which exclusively dedicated to cows.

If the attention is concentrated on the products of Giaveno, the most important element of the Town (and of all the High Sangone Valley) is represented by the different kinds of boletus mushrooms.

Other typical products are the "Cevrin" of Coazze" and the "Tuma del lait brusc" cheeses. The former is also presided over by Slow food, an Italian Organisation which aims at preserving and improving traditional food products.

The economic fabric consist of 343 unites in the industrial sector, 322 in the trade market, 23 in the institutions and 380 units in other activities.

As far as the demesne of the Town of Giaveno is concerned, the Municipality owns and manages 21 green areas (for a total of 40,785 m^2), 15

real estates, 10 schools and 25 among motor vehicles and other mechanic vehicles.

Furthermore, Giaveno has 97 employers without taking into account the politic administration and the fixed term contracts. Figure 1 shows the location of the case study.

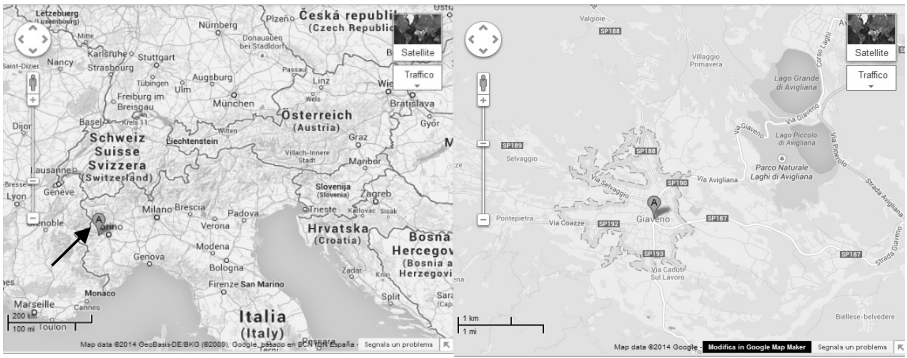

Figure 1. The Town of Giaveno

Source: elaboration from Google maps, Preliminary Environmental Analysis document

Discussion

The EMS architecture of the Town of Giaveno: main characteristics

The EMS architecture of the Town of Giaveno follows the classical levels defined by the ISO 14001:2004 Standard and reported in the Documental Pyramid (Figure 2).

In the first step, the Environmental Preliminary Analysis, the attention has been focused on the evaluation of the direct and indirect environmental aspects and impacts and on the analysis of the Italian legal requirements. The activities of the Town of Giaveno have been divided into two groups, direct and indirect, as reported in the following list.

1. Direct activities:
    a. Offices.
    b. Management of the real estates.
    c. Management of the property.
    d. Snow clearing out.
    e. Management of the graveyard.
    f. Green areas.
    g. Management of the road network.
    h. Public lighting.

i. Eco - centre (the centre in which citizens can deliver some kind of waste such as electric devices and hazardous waste).

2. Direct activities:
    a. Offices.
    b. Management of the real estates.
    c. Management of the property.
    d. Snow clearing out.
    e. Management of the graveyard.
    f. Green areas.
    g. Management of the road network.
    h. Public lighting.
    i. Eco - centre (the centre in which citizens can deliver some kind of waste such as electric devices and hazardous waste).
3. Indirect activities:
    a. Distribution of water and sewage.
    b. Collecting and management of waste.
    c. Competitive public tenders.
    d. Suppliers of goods and services.
    e. Emergency maintenance of real estates, property and green areas.

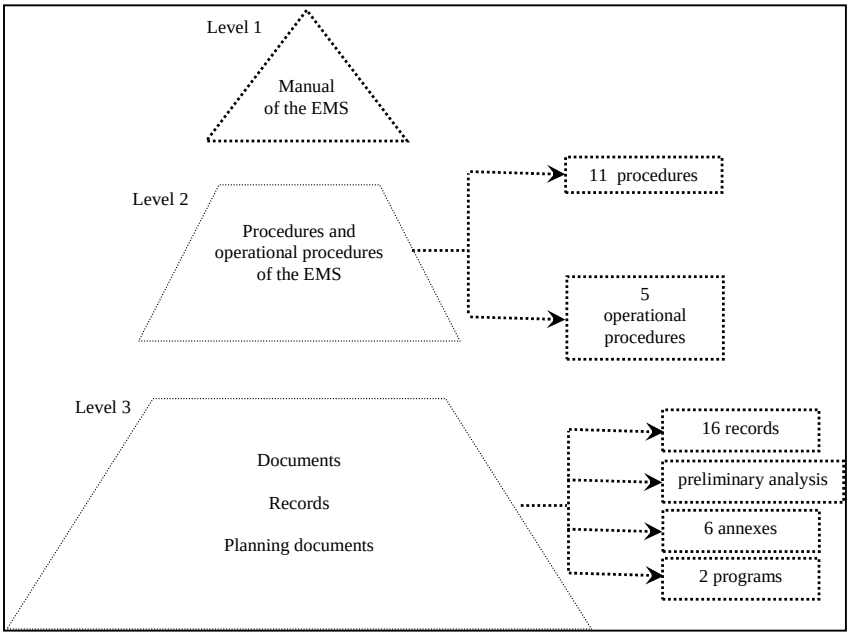

Figure 2. The EMS Documental Pyramid of Giaveno

Source: Internal data

For each direct activity the Administration calculated the Significance of the deriving impacts (water, waste, emissions, soil, etc) in accordance with a dedicated procedure. Furthermore, some indicators have been elaborated in order to verify the trend during the years and define new environmental objectives for the Town of Giaveno.

The evaluation of the Significance of the direct and indirect environmental aspects normally represents a critical point in the EMSs (Babakri, Bennett & Franchetti 2003). Being aware of this problem, the Administration of Giaveno opted to apply the well-established methodology in which two elements are simultaneously considered: the Probability (P) of occurrence of the environmental impact and the Severity (Se) of the same impact (Johnston, Hutcinson & Smith 2000; Zobel, Almroth, Bresky & Burman 2002; Zobel & Burman 2004; Põder 2006). In fact, this methodology has been applied to all the environmental aspects resulting from the aforementioned direct and indirect activities. Furthermore, Se is divided into different components depending on the kind of activity (direct or indirect). Thus, the Significance (S) of the impact is represented by the following formula:

$$S = P * \sum_{i=1}^{n} Se_i$$

Se changes depending on the kind of activity.

For the direct activities Se is divided into:

Se_1 – Respect of the legal requirements
Se_2 – Conformity with the Environmental policy
Se_3 – Impact level of gravity

For the indirect activities Se is divided into:

Se_2 – Conformity with the Environmental policy
Se_3 – Impact level of gravity
Se_4 – Level of authority

Se_2, Se_3 and Se_4 can assume a value from 0 to 3, depending on the position of the activity. Conversely, Se_1 can assume only two values, 0 or 1, but if the result is 1, it has automatically a High Significance, because the activity is not managed conforming to the legal requirements.

Depending on the different scores given to the Probability and the Severity, S can assume a total score from 0 to 4 for the impacts deriving from the direct activities and from 0 to 6 for the indirect activities. In the Town of Giaveno, the highest levels of S have been achieved for the following impacts of the direct activities, as reported in Table 1.

Table 1. Highest level of Significance for the direct activities of the Town of Giaveno

	Activity	Environmental aspect	Level of S	Comment
Direct activities	Management of the real estates	Energy consumption	Level 3 on 4	
		Waste	Level 3 on 4	
		Air emissions (in case of fire)	Level 4 on 4	In case of Emergency
	Management of the property	Emissions	Level 3 on 4	
		Consumption of non renewable resources	Level 3 on 4	
	Snow clearing out	Waste	Level 3 on 4	
		Soil	Level 3 on 4	
	Public lighting	Electricity consumption	Level 3 on 4	
	Green areas	Waste	Level 3 on 4	
		Consumption of no renewable resources	Level 3 on 4	
	Eco-centre	Air emissions (in case of fire)	Level 4 on 4	In case of Emergency
		Soil	Level 4 on 4	In case of Emergency

Source: Internal data processing

After defining the S of the impacts, It is important to measure and quantify of the impacts for calculating the indicators. In the EMS of Giaveno, 16 records were elaborate and 5 of them are useful to quantify water, energy and natural gas consumptions.

However, some activities not directly conducted by Giaveno are a fundamental importance for the improvement of citizens' quality of life. The Town of Giaveno consists of more than 100 hamlets deployed on a vast area. For this reason, some public services, such as waste collection and transport, water supply and treatment of sewage, are essential. In the EMS of Giaveno attention has also been paid to the definition of indicators deriving from indirect activities carried out by external enterprises.

Strong points in the application of an EMS to the Town of Giaveno

The Public Administration of the Town of Giaveno has to deal with a complex territory, most of which situated in a mountain context. Hence the adoption of an EMS plays a fundamental role in appraising public activities as well as the landscape and territorial aspects.

The EMS in accordance with ISO 14001:2004 Standard allows:

- to acquire a methodological tool orientated towards the environment with positive repercussions for other activities of the Public Administration;

Table 2. Set of indicators for direct and indirect environmental aspects

Direct environmental aspects	**Indicator**
Water	% variation of the consumption in the offices
Energy	% variation of the average annual consumption [year (n-1) year (n)]
	% energy used for public lighting upon the whole energy consumption
	% energy for other uses upon the whole energy consumption
	% variation of natural gas consumption [year (n-1) year (n)]
	% variation of diesel oil consumption [year (n-1) year (n)]
	% electric energy produced by renewable sources
Raw materials	% variation of paper consumption [year (n-1) year (n)]
	% of the recycled paper upon the whole used paper
	% of green public procurement upon the whole procurement (in euro)
Indirect environmental aspects	**Indicator**
Water	Water consumption in the municipality district (m^3/year)
Waste	% of separate collection of waste
	Per capital waste production (kg/inhabitant*day)

Source: Internal data

- to check all the environmental aspects of the activities of the Town of Giaveno and to draw a clear picture, useful to the public administration, employers and citizens;
- to have a tool that proves the awareness of the Town of Giaveno to the environment. This fact is important to create a dialogue between citizens and the Public Body, improving the trust;
- to rationalise activities: the EMS is able to reduce costs thanks to the evaluation of indicators and to pay more attention to the use of natural resources as well as non-renewable energy sources;
- to monitor the environmental data in order to give the necessary information for making resolutions in a coordinated and effective way. In this context, the EMS is a strategic tool for the territorial planning.

The EMS also shows some critical aspects. The most relevant of these is the great effort required of the Public Administration. This effort is necessary for increasing the stakeholders' awareness (employers, citizens, economic activities of the area) of the added value expressed by the EMS.

In the case of the Town of Giaveno, the EMS allows for the systematizing in its objectives and programmes all the necessary actions for enhancing

sustainability, as well as involving the economic sectors of this territory (above all agriculture and tourism).

Among the EMS objectives for the Town of Giaveno, it is possible to notice:

- the use of renewable sources in real estates;
- new buildings according to environmental criteria for energy efficiency;
- the creation of a label of quality for traditional food products;
- the environmental evaluation of the supply chain.

Conclusions

By applying EMS to the Town of Giaveno, some strong points as well as some critical aspect are noticed. As a public body, some difficulties in the adhesion to a voluntary tool, such as the ISO 14001:2004 Standard (or the European EMAS Regulation), can be connected to a general complexity resulting from applying a semi-rigid architecture to the system with the, often, last minute necessities of the citizens.

In fact, there are only 17 municipalities with an EMS certified (Accredia 2014) in the Piedmont Region. This represents only the 1,4% of the total (Piedmont Region has 1,206 municipalities). From this point of view, Giaveno surely shows a high level of excellence in the management of its environmental aspects as well as in the start-up of several initiatives in order to develop the territory.

As in other mountain areas, it is important to remember that Giaveno is witnessing a high depopulation trend. The last data collected by the Piedmontese Agricultural Census (Piedmont Region 2014) report a drop in the number of farms (form 1,108 in 1982 to 181 in 2010).

Both the farmers and the Town of Giaveno are trying to find the solution to this negative trend. Farmers are adopting strategies focused on business diversification (organic agriculture, educational farms, etc) and the Town of Giaveno has planned a tourism-orientated plan in which the agricultural production can play an important role for the development of this area.

In our opinion, if the main goal of public bodies can be reached in the administration of a territory, the EMS can be a vector for the correct management of the actions, because it provides a dedicated architecture. The implementation of the ISO 14001 Standard for the Town of Giaveno means the engagement of the community in the decision of the local development.

However, if a wider perspective is adopted, it is necessary to take into account not only the direct and indirect aspects of the Town of Giaveno, but also to create the networking with other neighbour administrations (Beltramo,

Duglio & Quarta 2011) in order to supply an environmental and territorial management perspective to contiguous territories. In fact, the initiatives adopted by the Town of Giaveno are in collaboration with the principal actors that are involved in the territory: the University of Turin, the Agency for the Environmental Protection of the Piedmont Region, the Province of Turin, "Turismo Torino" (association for the promotion of tourism in the Province of Turin) and the main trade associations.

In conclusion, in this context the EMS of the Town of Giaveno could represent the starting point for a more widespread implementation of the environmental management to the all Sangone High Valley.

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FOSTERING THE COMPLIANCE OF PRODUCTION PROCESSES IN AREAS WITH HIGH INCIDENCE OF ETHNIC ENTREPRENEURSHIP: THE CREATION OF A CHECK-UP TOOL IN PRATO INDUSTRIAL DISTRICT

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Introduction

Over the past two decades, the industrial district of Prato has been characterized by large transformation processes that have affected different socio- economic, cultural and institutional aspects (Dei Ottati 1996, 2005 and 2011; Toccafondi, 2010). The mutation of the district system has been characterised by the intertwining and tightly binding of endogenous dynamics with globalisation processes. In particular, the growing scale of the phenomenon of immigration has been shaping substantially the local context (Dei Ottati, 1996; Toccafondi, 2010), leading to an increasingly multi-ethnic and multicultural territory, with about 36,000 foreign citizens (and roughly 16,000 of Chinese nationality) residing in the province of Prato. Overall, they represent 15% of total residents, with Prato ranking second among Italian provinces in terms of incidence of the foreign resident population (IRPET, 2014).

Overall, these two processes strengthened each other: on the one hand, the profound transformation of the productive structure of the manufacturing industry in Prato, with a loss of centrality of the textile industry in favour of the tertiary sector; on the other hand, the strong growth of ethnic entrepreneurship capable of exploiting favourable conditions and caveats for its realization within the local production system (Dei Ottati 2011). Overall, active firms in the province of Prato at 31st December 2012 were little more than 29,000, with more than 12,000 run by foreign residents, of which 4,830 of Chinese nationality (IRPET, 2014). In addition, two-thirds of these firms are concentrated in the apparel industry, with an overall 80% of this sector

leaded the Chinese community. In this context, a large number of ethnic enterprises are characterized by low technological processes of production, extreme forms of exploitation of workers and high exposure to deep risks for their health and safety. In addition, there are many evidence of lawlessness both in terms of taxation and finance. This situation is typical of trajectories of "dirt road to development", as categorised by Mehrotra and Biggeri (2002 and 2007). Overall, the strengthening of economic and social patterns of irregularity is linked to the increase of inequality and social conflict within a territory that is traditionally cohesive, with a negative impact on the quality of life of citizens, whether the nationality and ethnicity, in the territory of Prato (Dei Ottati 2005).

In this regard, it is necessary to promote innovative solutions to facilitate upgrading processes from illegality and to promote socio-economic integration, as a strategic asset to valorise local resources in a perspective of inclusive development.

The stimulation of the firms' upgrading and compliance with legal requirements need increasing knowledge of the ethnic and cultural traits of the identity of the main foreign populations living in the territory and operating in different sectors of the district economy (Caloffi et al. *forthcoming*). For instance, it requires the adoption of tailored methods of communication and conflict management in order to enable widespread and long-lasting patterns of dialogue between foreign and indigenous entrepreneurs in the territory. Moreover, it is crucial to diffuse knowledge of the regulatory legislation (at European, national, and regional level) on various topics, among others work contracts, environmental regulations, hygiene and safety, labelling, etc. A possible solution presented in this paper is the application of an integrated and flexible check-up tool, able to take into account the specific cultural and ethnic traits of foreign entrepreneurs through non-invasive methods.

Material and methods

In Italy, different initiatives has been focused on the development of methodologies to promote firms' upgrading processes. In the late 90s-early 2000s, the project *C.U.O.R.E.* was implemented in the municipality of Naples, making available civil officers to support entrepreneurs on issues mainly related to contracts and taxation. In 2002, the project *Spinner* promoted the progressive integration of the Chinese community and the regularization of Chinese companies in the provinces of Modena and Reggio Emilia. In particular, this project fostered the supply of services, information, knowledge and skills that enable to interact directly and constructively with Chinese employers and workers in the textile and clothing sectors. In the same year, in the province of Lecce, a research was carried out on data about regular and

irregular employment, leading to the creation of a centre for the collection of knowledge on the underground economy and the development of small and medium enterprises. In 2007, as part of an action-research project for firms' upgrading and development in the clothing district in the province of Frosinone, a questionnaire was elaborated, in order to obtain from entrepreneurs general information about the size and volume of the market, as well as about their use of specific sources of funding.

Since September 2013, the Strategic Unit on Local Development of ARCO Lab (Action Research for CO-development) at PIN - University Campus of Prato municipality - has been conducting an action-research project with the aim of developing an integrated, flexible and shared check-up tool. The objective of this check-up tool is twofold. Firstly, to identify possible non-compliances of production processes with relevant legal requirements for firms in the industrial district of Prato. Secondly, to elaborate tailored and shared upgrading plans, allowing both Italian and ethnic entrepreneurs to gradually comply with the current legislation.

At a methodological level, our work started from a collection and review of existing check-up instruments - more or less structured and documented – used by associations of entrepreneurs and by civil officers in the territory. Some of these checklists were elaborated as multi-lingual tool, being therefore already oriented to an application to ethnic entrepreneurs operating in the district. However, they were limited to specific thematic areas (e.g. safety, environment, taxation) without addressing the different problems within an integrated approach. It should be also underlined the complex structure of the Italian legislation and the different procedures to obtain authorisations and other legal documents required for an entrepreneur to start-up and manage his/her own firm. These procedures are often varied according to the authority responsible for issuing.

The systematic integration of different field legal requirements, often overlapping although being related to different management areas, aims to support and enable business and production processes to be conducted in accordance with the law. The integrated approach in the evaluation of legal compliance may allow firms to obtain a systemic analysis of the situation and allow the entrepreneur to improve internal management procedures, and to streamline policies and business objectives.

In developing this check-up tool as main object of our action-research, particular effort has been devoted to dialogue with trade associations, regulatory bodies and associations representing foreign communities in Prato, in order to build on the existing knowledge and best practices used in the district and to take account of different instances. It appeared clear that the existing evaluation and check-up systems in use by local associations and professionals, require for repeated visits in the firm by experts for each area.

A multi-consultative and non integrated approach may not be effective for foreign entrepreneurs, which could have to implement several corrective actions for improvement and compliance, without linking everything together in an integrated vision of business and production processes.

Finally, there has been no limit to adding questions and requirements to the existing checklists for the elaboration of a new and innovative check-up tool. Our work of merging has provided a rationalization of the requirements and their break down into progressive levels of compliance. Furthermore, we proceeded to sort the requirement starting from those that, if disregarded, may cause health and safety hazards for workers and citizens (ie. workplace safety and environmental management), followed by those requirements whose no compliance does not involve immediate health and safety risks.

Results and discussion

The action-research project led to the creation of a check-up tool – henceforth called *ASCI tool* - for the assessment of compliance with mandatory requirements of different areas of business management: workplace safety, environmental management, contracts and workers' rights, taxation, food hygiene. The tool was developed using a rational and systematic approach to individual regulatory areas. In addition, it can be flexibly applied to firms regardless their size, typology and sector, relying on an innovative integrated logic and focusing on the main issues inspected by local official authorities during control actions. It is crucial the entrepreneur perceives the application of the integrated check-up tool as an opportunity, rather than a constraint or official inspection.

The *ASCI tool* consists of the four following parts, with Table 2 showing the full index:

- Part 1: General information about the firm;
- Part 2: Areas of business management (mandatory requirements);
- Part 3: Direct observation;
- Part 4: Problems and opportunities.

Part 1 involves the collection of information about the activities and history of the entrepreneur and his/her firm, allowing to draw a general picture of the business organisation and management: company name, headquarter and production plants, legal representative (and presence of any family members), information on the plants, size of the market, turnover, number of employees, etc.

Part 2 is the technical core of the *ASCI tool*. It consists of a total of 147 questions, divided into 6 sections on the various areas of mandatory legislation. The number of requirements and questions distributed in each

section is shown in Table 1. The degree of compliance with a requirement is checked on three levels: pre-requisite, basic level, intermediate level. A pre-requisite is generally represented by an authorization or a fundamental document, whose absence totally affect the conformity with the requirements of the law. Failure to comply with a pre-requisite in the case of official inspections by local authorities can entail serious consequences, such as high-cost fines or temporary closure of the business. The basic level involves the verification of the correct implementation of operational and management practices, in accordance with the authorizations and the documents regarded as pre-requisites. The intermediate level is the objective evidence of the application of a practice or everything else stated in official documents as previously specified at pre-requisite and basic levels. For each requirement therefore, full compliance emerges only if questions in every level are satisfied, otherwise leading to partial or no compliance.

Table 1. Number of requirements and questions per section

Section	No. of requirements	No. of questions
Workplace safety	12	35
Environmental management	3	18
Contracts and workers' rights	11	28
Taxation	7	29
Food hygiene	8	24
Training and information	3	13

Source: own research

Table 2. Index of *ASCI tool*

Part 1 – General information about the firm

Part 2 – Areas of business management (mandatory requirements)

1 – Workplace safety
1.1 – Safety risk assessment
1.2 – Supervisor of workplace safety
1.3 – Employees' representative for safety
1.4 – Medical doctor for workplace safety
1.5 – Records of workplace accidents
1.6 – Conformity of electrical system
1.7 – Grounding system
1.8 – Safety of equipments
1.9 – Individual protection devices
1.10 – Data sheets for chemicals
1.11 – Fire risk
1.12 – Risk of interference

2 – Environmental management
2.1 – Authorisations
2.2 – Waste register
2.3 – Waste management

3 - Contracts and workers' rights
3.1 – Associates, employees and collaborators
3.2 – Contract categories
3.3 – Hiring and terminations in the last 6 months
3.4 – Work organisation
3.5 – Territorial insurance position
3.6 – Hiring official communication
3.7 – Social security position
3.8 – Wages/salaries management
3.9 – Hiring of employees belonging to vulnerable groups
3.10 – Toilets
3.11 – Changing facilities

4 - Taxation
4.1 – Balance sheet
4.2 – Certificate of incorporation (only for corporations)
4.3 – VAT
4.4 – Taxes paid in the last financial cycle
4.5 – Special requirements in case of commercial activities for private consumers
4.6 – Special requirements in case of commercial activities for other firms
4.7 – Special requirements in case of commercial activities for foreign markets

5 – Food hygiene (only for food companies)
5.1 –HACCP manual
5.2 – Health authorization
5.3 – Qualification of suppliers
5.4 – Raw materials arrival
5.5 – HACCP plan
5.6 – Cleaning and sanitising
5.7 – Pest control
5.8 – Analytical plan

6 – Training and information
6.1 – Compulsory training
6.2 – Job training
6.3 – Information

Part 3 – Direct observation

Part 4 – Problems and opportunities

Source: own research

The third part consists of a list of requirements on the same technical areas indicated as in the second part to be assessed through direct on-site observation in the firm's headquarter or factories. For each requirement, a subjective evaluation by the auditor of complete, partial or no adequacy will be awarded as resulting from the observation. The fourth and final part consists of 3 questions to derive information about the main difficulties faced by local entrepreneurs in the compliance with relevant legislation, and about policy suggestions to support local entrepreneurs in improving their compliance.

Table 3. Pilot testing using a reduced version of the ASCI check-up tool

Firm	A	B	C	D	E
Sector	Fast fashion	Fast fashion	Fast fashion	Food	Food
Since	2014 (new opening)	1998	2005	2008	1991
Entrepreneur's nationality	Chinese	Chinese	Chinese	Chinese	Italian
Sale / Production	Direct sale / Sub-contracting	GDOs + Exports/ Sub-contracting	GDOs + Exports / Sub-contracting	Direct sale	GDOs + Exports / Sub-contracting
Property/Rent of building	Rent	Rent	Rent	Rent	Rent
Market	EU, Extra EU	EU, Extra EU	Italy, EU, Extra EU	Local	Italy, EU, Extra EU
Safety risk assessment	Not done yet (new opening)	Done	Done	Done	Done
Supervisor of workplace safety	Not nominated yet	Nominated	Nominated	Nominated	Nominated
Records of workplace accidents	Not filled present (new opening)	Filled	Filled	Filled	Filled
Conformity of electrical system	Done	Done	Done	Done	Done
HACCP manual	/	/	/	Present	Present

Source: own research

Following the full application of the *ASCI tool* with regard to a certain firm, auditors will highlight the cases of partial or no compliance with the legal requirements, and the possible consequences in case of official inspection by local authorities. Together with each entrepreneur, an additional phase of analysis and exploration of the assessment results is conducted with the aim of defining corrective actions, as well as timing and responsibilities, to solve those cases of partial or no compliance.

The validation process of this integrated check-up tool is structured in two stages: pilot testing, and complete application. The former was carried out in February 2014 by interviewing 5 entrepreneurs operating in the textile-clothing and food sector in Prato. At this stage it was decided to use a reduced version of the *ASCI tool*, in order test the logical integrated approach and the organisation into three levels (pre-requisite, basic, intermediate) for each requirement. The interview provided a first-hand knowledge of the entrepreneur and the firm's history (Part 1). Then, the focus was placed on the technical requirements, in particular regarding workplace safety and food

hygiene (where applicable), using simple questions regarding the pre-requisite level. Entrepreneurs were also asked to discuss about difficulties encountered in the application of the legislation and encouraged to propose suggestions for improvement and facilitation for all firms in the district. The main findings obtained through the pilot testing are reported in Table 3.

These preliminary results show a substantial compliance with workplace safety and food hygiene requirements in the interviewed firms, with the exception of the newly opened enterprise, which was still preparing the documents to comply with its obligations. However, the sample of firms is not to be considered as representative. At this stage, interviews had the primary goal to test and refine the methodological approach of the check-up tools and to develop a systematised procedure for its complete application in a greater number of firms in Prato industrial district, which represent the second step for the validation of the *ASCI tool*.

The application of the *ASCI tool* in the territory of Prato will be conducted by 15 young professionals of different nationalities (Italian, Chinese, Pakistani), who has been purposively trained in order to promote the culture of legality among Italian and ethnic firms, organisations and associations. These professional will play the innovative role of "technical mediators", eliminating – if necessary - language and cultural barriers, and accompanying entrepreneurs to increase the legal compliance of their business and production processes. In addition, they will act as bridges between ethnic entrepreneurs and trade associations, institutions or consultants, suggesting also possible sources of funding.

In order to allow for a complete validation of the *ASCI tool*, these professionals will apply the tool in the period April-August 2014 in firms belonging to the textile-clothing and food sectors and operating in the area of the province of Prato, regardless of nationality of the entrepreneurs. By applying the tool in at least 35 local firms, this phase aims also at spreading the opportunity for entrepreneurs to be supported, if necessary, in elaborating gradual and not imposed upgrading plans. The tool will enable these technicians to obtain a detailed picture of the firm and to provide possible suggestions to overcome minor and major non-compliances, as part of a free consultancy service. In addition, the adoption of a systematised and integrated tool allows avoiding numerous and repetitive visits to each firm by different consultants for each management area, providing entrepreneurs with the assistance of a single professional (or an organized mini-team of two technicians of different nationality) able to verify the critical elements in the company and to propose effective corrective measures.

The application of the *ASCI tool* intends to contribute to the diffusion and fulfilment of shared ethical and productive quality standards along territorial value chains. In addition, by fostering diffused and shared upgrading plans,

co-development trajectories will be pursued, involving the different ethnic communities characterising the socio-economic context of Prato.

Future research perspectives of this application include the opportunity to develop a specific standard based on different levels of conformity to both legal and voluntary requirements, in order to adopt a certification system for firms and local value chains. This action will require dedicated investigations aimed at acquiring strategic information and shared efforts with all local authorities and stakeholders. A similar voluntary certification has the potential to concretely contribute in promoting the diffused sharing of ethical and productive rule within the industrial district, as a crucial factor for local development and the increase of wellbeing and quality of life.

Conclusions

This action-research project builds an innovative relational network a wide local partnership to foster upgrading processes, by opening dialogue spaces among indigenous and ethnic enterprises, associations of entrepreneurs, local authorities, research centres and universities, and civil society. This partnership enables the new professionals and the *ASCI tool* to be regarded as key resources for local development strategies based on firms upgrading and legal compliance with mandatory requirements. Overall, they will be able to bridge and foster dialogue between actors and communities characterised by different – but often complementary – attitudes, experiences, cultures, and skills.

The application of the innovative *ASCI tool*, being unique at the national level in Italy, opens relevant opportunities and perspectives for the industrial district of Prato, within a development approach based on social and economic integration (Mehrotra and Biggeri 2007). By building on the multicultural and multi-ethnic characteristics and potentialities of the territory, it would be possible to boost the image of Prato in Italy and in the world as an industrial district based on quality, ethics and human dignity.

Nonetheless, the experimentation of this integrated check-up tool by newly trained technical mediators may represent a valuable experience that can be adapted to other areas with a similar incidence of ethnic entrepreneurship.

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A SELF-DEVELOPED OR STANDARDIZED QUALITY MANAGEMENT SYSTEM? A CASE STUDY OF GINO ROSSI S.A., POLISH FOOTWEAR MANUFACTURER

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Introduction

The ongoing globalization process, international trade, the evolution of advanced communication and marketing methods significantly an increased customer requirement for service and product quality can be observed over the last century. This factor stimulates a harsh competition throughout different markets. Companies are faced with the problem how to maintain customer's loyalty and gain new customers. Product quality has become the area of main interest; this led to development of managing procedures. It covers ethical business conduct, the reasonable production policy as well as providing high quality products. The first complete set of organizational practices, TQM (Total Quality Managements), developed in Japan in the mid-20th century as an effect of works of The Union of Japanese Scientists and Engineers Committee. Despite of innovative ideas raised by two American members of the committee the whole conception didn't gain much interest in the United States. This new approach to the quality policy has revolutionized the market. Eventually, the TQM concepts have been successfully implemented in the United States (Szczepańska K., 2010). Nowadays, the understanding of TQM ideas concentrates on flexibility and competitiveness of the whole company by means of constant effectiveness improvement. This process challenges every employee, no matter his or her position in the company. It serves more as a philosophy than instruction, based on eight main principles: customer focus, leadership, people involvement, process approach, system approach to management, continual improvement, factual approach to decision making, mutually beneficial supplier relationship (Sikora T., 2010).

Among various quality management tools and techniques it seems the ISO 90000 gained the biggest popularity and common recognition. This model of quality procedures can be easily adapted and tailored to the specific needs

of each company. Completing all ISO requirements results in an independent certificate. Indisputably it has significant positive influence on company image in the consciousness of customers and business partners. Over a million organizations worldwide are independently certified, making the ISO 9000 one of the most widely used management tools. However, is this certification really that crucial and indispensable? Can customers trust the product's quality even if it is lacking the ISO symbol? Could the same aim be achieved by using local quality management system tailored to particular market conditions? This seems to be an interesting and topical question especially in the context of criticism of the system. The following article delineates a certain aspect of this issue, calling for a wider discussion.

General characteristic of Gino Rossi S.A. company

Our case study is Gino Rossi S.A. which has been operating on the Polish market continuously since 1992. The company specializes in designing, manufacturing and distributing footwear and leather goods. It should be mentioned that the early nineties of the twentieth century was a tumultuous period of political and economic transformation in Poland that enabled private businesses activity and also begun process of creating capitalist consumer and entrepreneurial behavior. Originally Gino Rossi focused its production on men's line, but since then has gradually expanded its range of products to cover also women's and kids' lines, leather handbags and belts, as well as shoe accessories. The key achievement of recent years can be considered the creation of the Gino Rossi Capital Group. The group's portfolio of brands includes leading brands from the Polish fashion market. In the middle of 2006 the Gino Rossi Capital Group appeared on the Warsaw Stock Exchange with successful stock quotes till present. Moreover, significant sign of continuous development may be the expansion on foreign markets. Currently, the network of brand stores in Germany, Czech Republic, Russia, Ukraine, Hungary, Lithuania, Latvia and Georgia comprises over 30 stores. The company consistently implements development strategy based on building strong brand and a wide network of brand stores providing a strong and stable position in the segment of branded footwear.

Gino Rossi is categorized as a strong, well-known brand, considered luxurious. Its shoes are perceived as a high-quality handcraft, adding a touch of modernity to traditional shoe-making. From the assumption their target customers are consumers who are willing to accept higher than the average footwear price, preferring sophisticated elegance and prestige. They describe the nature of their products as a fresh take on the classics. Gino Rossi offer wide range of mostly formal footwear, made entirely of leather, created by Polish and Italian designers in accordance with global trends (http://www.gino-rossi.com/).

Men's and women's footwear in majority are produced in a factory, located in the northern Poland. With reference to production, the manufacturing process is a highly desirable combination of traditional craft and machine serial production. It is possible mostly thanks to highly qualified staff, involved in cobbler craft for many years. It should be said that from the very beginning a part of employees, who significantly enriched the company with great knowledge passed from falling shoe factory that prospered during the Communism. The Gino Rossi factory is well equipped, thus ensuring high quality of products as well as comfort and safety of workers. Modern technologies are in contact with a traditional craft cobbler.

Crucial for this article is the fact that Gino Rossi management decided to implemented TQM according to ISO 9001 in 2007. The decision was a result of natural need for continuous development, standards evaluation and quality control system enhancement. The rejection of the ISO standards was attributable to a number of factors, the most significant of which are: great load of paperwork, high costs of initial phase, failure to adapt to the changing needs of industry and structural rearrangement which might have influenced labor relations detrimentally. Seeking certification has become unnecessary and laborious, especially in comparison with the effectiveness of previously existing system. Procedures were recognized as sufficiently effective or even advantageous compared to the proposed standard. The internal quality control system, which has been worked out and constantly updated during the company’s existence, covers every single stage in the production process, starting from design, through actual production, up to customer service. Nevertheless, it was a valuable experience that resulted in a broad look at quality issue and suggesting more effective problem solving.

Internal quality management system at each stage of production

The most transparent way to describe individual quality system in Gino Rossi would be a separate approach to the different stages of production. All stages and the related work processes take place in a single plant, thus facilitating quality control of every single process, the effectiveness of which shall build highest quality of the final product and customer satisfaction.

Design and constructing process

The preliminary manufacturing processes that include designing and constructing are crucial from the perspective of the quality of the final product. The design process has a decisive impact on the attractiveness of the footwear and its reception by customers. In addition, to some extent, in the long term, the projects form the main features of the brand giving it a very individual

character and recognizable style. This process cannot be subject to control activities because of its nature. Each designer is responsible for the individual lines constituting a comprehensive collection. The design process usually starts with two seasonal advance giving a lot of time to test each pair of shoes. Designers usually work in fixed pairs with constructors who create, using computer program, detailed drawings of the shoe cutting and select materials and specific suppliers. Decisions are taken based on the created and continuously updated database containing the characteristics of the already used materials from cooperating suppliers. At any time constructors are able to take advantages from old models and already developed design solutions. In order to guarantee the highest quality of this process constant communication and the sharing of experience and knowledge are necessary. A special test involves only shoes made from new and yet unproven materials or having a new technological solutions. In this case, the production department assembles shoes with materials previously ordered. Candidates nominated for the test are selected from a database of employees, which provides basic information on feet size, body weight and type of work. The majority of new models is tested by its constructors, due to their knowledge about the possible critical points. In the other case, the testing person is informed about kind of test and particular elements that should be subject of special attention. At the end of each test, information is gathered and analyzed. Special attention is paid to the comments provided by the technologist about character of materials and the results of any leather testing. In case of a negative outcome, corrective and preventive actions are taken. Such procedure allows for early elimination of any defects in design or chosen materials. Consequently it helps to reduce costs. During final meeting when specific line is approved the management creates a look of entire seasonal collection. Decisions are based on anticipated trends in fashion, keeping in mind the distinctive brand character. This is a key process to the success of the entire collection (Gino Rossi internal materials).

Ordering and leather testing process

In Gino Rossi all materials needed by production are ordered. The factory has been cooperating with the same suppliers. It allows to expect certain quality as well as to negotiate relatively bargain purchase price. Leathers are usually imported from Italian tanneries, but some materials come also from the local tanners. Differently are shaped orders for textile materials and soles as well as auxiliary materials and packaging. They come mostly from Polish manufacturers. Due to the costs optimization and reliable relationships with suppliers' hooves, punching, soles and heels, insoles and other materials are not subject to quality control. Quality control applies only to leather because this material is characterized by a very low reproducibility of quality due to its natural origin.

The quality of leather used in the shoes manufacture defines the basic parameters of footwear therefore it has a significant impact on the final quality of the product. Tanning products are characterized by a highly variable level of quality, and the differences can be seen by every consumer. The leather market and tannery services suppliers consists of a relatively numerous small manufacturers, but it should be noted that usually these are companies with narrow specializations in terms offered product. Gino Rossi systematically expands contacts with new potential service providers at the same time deepening relationships with existing partners.

In Gino Rossi quality control encompasses 100% of leather supply. Control department begins with verification of quantity, type and color of leather. In case of color differences controller is obliged to finish the leather properly and compare with the model. Usually in the case of differences in quantity or color delivery should be accepted. Otherwise the controller is obliged to inform the production manager about complaint the goods. Due to provide continuity of production returning the goods shall be avoided. Further supply control involves checking each skin separately, in order to estimate the class. Generally the structure of classes indicates 60% to 65% of leather from the first class (highest quality), 30% to 25% of the second class and about 10% of the third class. In manufacture process lower classes materials are not in use. In the next stage controller evaluates leather grip, its softness, thickness and overall appearance. Special attention is paid to defects such as pits, careless imposition of dyes, uneven color, visible yoke, floating face, careless carving, flaking finishes and leather linings. Some defects may disqualify parts of raw materials. In the case when the leather is accepted it should be passed to the production section according to the order plan. In practice, Gino Rossi accepts barely visible yoke or floating face. Employees are able to cover up these defects.

Common practice in Gino Rossi factory is subjecting leathers to specialized laboratory tests including finish coat stability studies on flexometer in accordance with applicable requirements of the Polish standards. Additionally Quality Control Department designed a special test regard to coating of grain leather, in particular lacquered ones used in fall-winter collection. The difference is in the placement of flexometer in conditions of controlled, constant temperature below zero. The purpose of the test is to predict the leather behavior when used in winter conditions.

Control of manufacturing processes

In Gino Rossi the most extensive is control, which covers manufacturing processes. This involves the care of manufacturing quality. It should be noted that the shoes production process, despite of mechanization still require a lot of manual workload. This forces a specific approach to quality. Due to the fact

that during production the biggest number of defects may occur, the monitoring and control procedures are divided into four phases: operational control, control of special processes of intermediate- and final control.

The purpose of conducting operational control is early detection of errors and their elimination. It allows minimizing losses arising from errors. Furthermore, the control system provides specific information, which is required in analysis and modernization of the processes. The actual control time covers all phases of the production process. The responsibility for operation control lies on adequate foreman, masters and managers. It is supervised by a production manager. Actions taken within the operational control do not have character of the procedure but they rely on accuracy and precision. Employees have a sense of responsibility arising from deep understanding of pro-quality assumptions and freedom to take corrective action. However, they are required to report serious errors and unsolved problems to senior employees. Manufacturing control covers the following processes: preparation of qualitative and quantitative raw leather in accordance with the submitted demand, cutting of leather, using hydraulic cutters and plotters, trademarks application and thinning edges, stapling elements, leather relieving in a special room at controlled humidity and temperature, pulling the uppers on the hoof and sole assembly, care process. The managers of cutting and sewing process are required to create monthly reports on total quantity exchanged defective tiles for each cutting. The controller confirms the compliance of the goods inspected by his/her signature.

The only one special process subjected to daily inspection at the Gino Rossi factory is the durability of the bonding between the upper and sole. The measurement is made daily on one pair of shoes randomly taken directly from the assembly line. Measurements are made after 24 hours after applying the soles on a tensile tester. The test results are documented and compared with the specification.

The main principle of internal control applies to an "internal customer". According to it, as the controller is considered an employee performing next in the process of technological operations. The responsibility lies with each employee at his/her workplace. Internal control allows fast errors finding, playing a vital role in quality assessment. If the product does not meet the requirements the worker is obliged to separate it from the conforming products.

The final control is carried out at the Assembly Department prior to packaging. The control is conducted on 100% of production and responsibilities for that lies only on one controller. In the case of non-compliant product (according to list of defects classification) controller removes a pair of shoes from the assembly line. Defective shoes after

recording the type of defect is passed for repair. In this way, production is not hindered. After each work day the controller should consult with the Director of Production and together shall try to take preventive action. Faultless footwear is appropriate paired and packed (Gino Rossi internal materials).

Defective product handling

The manufacturing process control in Gino Rossi company is well considered and includes any area. Clearly defined rules and certain ways of communication and responsibility ensure employees comfort. Entire control process relies heavily on trust in employees' skills and experience. In Gino Rossi, in order to minimize losses, there are also special rules for handling defective products at each manufacturing stage. Firstly, employees evaluate whether the defect can be remedied or not, referring to internal three groups defects classification. Next defective pair of shoes is passed to the person responsible for the repairs, who notes the repair and used for this purpose materials. Replaced items are stored for the weekly inspection of defective components by Production Manager. If the employee notices a series of faulty components is obliged to inform Production Manager, who makes immediate decisions on whether to stop production in order to eliminate losses. Managers are also required to analyze the causes and places of defects. In purpose to facilitate the decision-making process classification of defects was created. According to it Gino Rossi indicated the three groups of defects. The first group included the errors slightly lowering the value of footwear. A pair of shoes is repaired, and then directed for sale. Footwear, which is loaded with defects from the second group, also undergoes a repair but is distributed by Factory Outlet at a reduced price. The third group of defects completely eliminates shoes from sale. In this case, repair or retouch is impossible or unprofitable. The majority of defects are likely to be noticed and eliminated in previous material inspections (Gino Rossi internal materials).

Ways of communication

Regarding to model of communication in Gino Rossi, there are no internal documents. Employees worked out their own communication ways, for example special marking understandable for everyone. The lack of extensive paperwork is considered as an advantage. Moreover it helps to maintain informal labor relations. However, sometimes it can cause misunderstandings and problems in determine liability.

The internal Gino Rossi quality system involves every employee to provide continuous monitoring at every stage of production. Thereby, preventive and corrective actions are taken quickly and efficiently. Idea of

monitoring the processes resembles basic assumption of kaizen philosophy. Furthermore, the issues of process improvement are discussed on a regular board meeting, regarding the departments' statistics. Some conclusions are temporary; others look more like as long-term plans. Management should set the future quality goals. In such a way Gino Rossi realize the assumption of continuous improvement.

Survey results

The primary goal of quality management systems is to assure that customer requirements are determined and met by enhancing customer satisfaction. Thus to evaluate the effectiveness of the Gino Rossi quality system the research was carried out on how consumers perceived their brand. The main interest was to establish correlation between the expectations, quality, price and customer service design, assessed by using the five-point scale (East R., Wright M., Vanhuele M., 2011)

The chosen form of research was anonymous questionnaire containing 13 questions. By the end of the survey period, data had been collected from 100 individuals, 76 of whom were females and 24 males. Only two age groups were identified (18 – 35 and over 35 years); 86% of respondents were urban dwellers.

89 respondents were Gino Rossi clients. The brand was definitely less popular among younger respondents. About the half of younger respondents didn't follow Gino Rossi offer, thought they mostly prefer leather footwear. As a reason a high price was pointed out but also failure to meet the aesthetic requirements. Respondents below 35 years of age negatively evaluated shoe color, design and the adequacy of the global trends. However, they still considered Gino Rossi shoes as high quality and luxury, declaring intention to return to the brand.

Answers gave by group over 35 age showed bigger popularity of brand. The majority of those who declare buying Gino Rossi shoes also admitted to follow the offer, which may suggest that they belonged to regular customers. Most respondents appreciated quality, careful finish and comfort. Contrary to the first age group none of the respondents over 35 expressed negative opinion on aesthetic value. They also perceived Gino Rossi footwear as luxurious but interestingly, there were no significant differences in the ratios of price. Over 50% surveyed mentioned as a drawback high price and also lack of brand stores in their neighborhood. **Nevertheless, majority was willing to recommend the brand to other customers.**

Last section of the questionnaire required respondents to give information on not choosing Gino Rossi footwear. Figure 1 provides summary statistic.

Figure 1. Response structure for not choosing Gino Rossi footwear

Source: own research

It is seen in this figure that the most frequently mentioned reason was too high price. Additionally younger group confirmed dissatisfaction with the offered designs. Relatively large group of customer expressed also a problem with location of brand stores. Worth to point is that only a small number of respondents indicated: bad quality and bad complaint experience. This may suggest significant positive perception of these factors.

No greater difference between male and female answers was observed. Interestingly, women more appreciated convenience of use when men gave a higher rate to workmanship.

In summary, these results show that quality of Gino Rossi footwear gained high rate within every age group. Undeniably strong negative factor was price. Overall results suggest also that footwear meets the aesthetically requirements of more mature customers. To a certain extent it fits the brands appearance created by designers.

Conclusions

Gino Rossi's quality control has been worked out and constantly updated during the company's existence and finally forms a coherent quality management system. This very individual system is based on confidence on staff qualification and experience. Research on customer satisfaction has proved the positive reception of Gino Rossi brand. The results confirm the effectiveness of individual quality management system. Therefore, the ISO

certification proved to be unnecessary and replaceable especially for companies with strong brand. Furthermore, the Gino Rossi case revealed weaknesses of the ISO 9000 management system. This suggests the following conclusions:

Implementation of the ISO 9000 management systems is unnecessary to achieve planned goals.

A self-developed quality management system allows achieving high product quality and building strong brand image.

Undeniable drawbacks of ISO 9000 are:

– risks and uncertainty of not knowing if there are direct relationships to
– improved quality, and what kind and how many resources will be needed,
– great load of paperwork,
– efforts and time required to adjust the ISO 9000 to certain company profile
– and the constantly changing market conditions
– high cost of initial phase.

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TRACEABILITY ASSURANCE IN THE PRODUCTION OF FRUIT AND VEGETABLES

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Introduction

Fruits and vegetables are an important component of a healthy diet. From time to time, problems with the health quality of fruits and vegetables appears in the foreign press, such as Polish raspberries in Denmark (Songer 2005) or imported in 1996 to the United States and Canada, raspberries from Guatemala contaminated with Cycolospora (Buzby http://www.ers.usda.gov.pl). In Europe, the so called "cucumber scandal" and later also tomato, chicory and germ scandals were widely publicized. As a result of bean sprout infection with a dangerous strain of E. coli EHEC, more than 30 people died. Producers had lost millions of dollars because some consumers in a particular period of time stopped buying specific vegetables, because of the fear of their contamination (Leonowicz 2011). Detection of the source of infection and restoration of consumer's confidence in fresh vegetables, became a crucial goal. These incidents, besides of a significant decrease in demand for a particular product or group of products, caused the increase of consumer's awareness of the risks induced by contaminated food products. After such incidents, contaminated products are removed from the market, causes of problems are examined and corrective actions are taken to prevent reoccurrence of the irregularities. In such situations it becomes important to recreate the way back through distribution, processing and production of contaminated products. The implementation of a the traceability system in the distribution chain serves as irregularities explanation tool. In the food sector, this system exists in the EU from 1 January 2005.

The aim of the study was to present the traceability matter in food production. Taking fruit and vegetable sectors as an example, the legislative requirements for horticultural farms related to ensure the traceability were indicated, and the model of traceability system in the production of fruits and vegetables was developed.

The concept and importance of the traceability in food production.

In the terminology standard PN- EN ISO 9000:2006 defines traceability as the ability to identify and trace the history, application or location of the subject of consideration (paragraph 3.5.4). If a product is considered, traceability can relate to the origin of materials and parts, the history of manufacturing, distribution and location of the product after delivery.

The traceability is a response to the spread of food poisoning across the European Union that is related to the lack of a comprehensive approach concerned food safety (Śmiechowska 2013). The ability to trace the history of food at all stages of production and distribution enables to ensure food safety (Dzwolak 2008). Based on the data, collected by manufacturers and food operators, it is possible to identify the source of food safety hazards. Applying principles of traceability allows to reach customers of dangerous product and warn them about the threat. Traceability, including the use of the principles of GHP, GMP and HACCP systems, is an important element of the system to ensure food safety. It allows identification of processes and activities in the food chain, and thus, recognition of the source of food safety hazard and removal of foods from the market, that present a danger for the health of consumers. This way the spread of food-related risks can be prevented. The ability to identify the origin of food products increases consumer confidence about the quality and safety of purchased food (Kher et al. 2010). The traceability system should work in a manner that allows the participant of the food chain to identify at least this entrepreneur, from which the food comes from and that to which it is provided, in accordance with the principle: *one step back - one step forward.* Identification chain, created in this way, will provide the access to the source of the threat (Korzycka-Iwanow, 2007). Traceability is therefore protecting both the consumer and food producer. The information obtained through the functioning of the traceability system can be helpful for consumers in order to ensure the quality and safety of foods available on the market. It may also have a positive influence on the image of food producers and operators who apply the principles of traceability.

Legal conditions to ensure the traceability of food

The obligation of traceability (ability to trace) in the food sector is based on the Article 18 of Regulation (EC) European Parliament and Council Regulation No 178/2002 *laying down the general principles and requirements of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety.* In there, the most important document of the food law, organizations from the sphere of agribusiness are required to

control the movement of raw materials, semi-finished products and any added substances, or the ones intended to be added to food at all stages of production, starting from primary production through its storage, processing, transport and distribution, to be able to determine the origin of the lot of products and their ingredients. Introducing the possibility of tracing back the way from the end product to the origin of the raw materials, results from the primary assumption of food law, which is to ensure a high level of protection of human life and health and also to protect the interests of consumers (Article 5, point 1). In accordance with the Art. 17, paragraphs 2 and 3 of the regulation, entities operating in the food and feed market, in order to identify the person providing the food or substance added to food, should create a system and adequate identification procedures and information obtained this way should be transmitted to the competent authorities. In order to facilitate the monitoring, food introduced to the UE market should be properly labeled and marked (Article 18 paragraph 4). To support the regulation, it was stated that the establishment of a comprehensive system for monitoring the movement of food is necessary, for the smooth withdrawal of products from the market, in case occurring food safety problems and allows to give an adequate information to consumers or persons responsible for the control of food (paragraph 28).

Requirements of the traceability system according to ISO 22005

Bearing in mind the requirements of food law, in December 2007, International Organization for Standardization (ISO) has developed and released the standard concerning the traceability: BS EN ISO 22005:2007 *Traceability in the feed and food chain. General principles and basic requirements for the design and implementation of the system.* Implementation of this standard in organizations belonging to the food sector is voluntary. The standard is helpful in the design, implementation and maintenance of the traceability system in organizations in accordance with the requirements deriving from Article 18 of Regulation (EC) No 178/2002. According to the recommendations of standards, traceability system should be verifiable, and each element of the system should be consistent with the objectives, should be result-oriented, economically acceptable and technically feasible, take into account different requirements (in particular legal and regulatory requirements arising from customers' specifications), be as accurate as is required. The criteria that should be taken into account when designing a traceability system: the aim of the system, the requirements results from the law and policies, products and/or components related to the aims of the traceability system, place of the organization in the food chain, route of materials in the food chain, requirements for obtaining, storing and transferring information, documentation required to achieve the aims of the

system in the organization and coordination of the links in the food chain with other organizations and other elements of the project. The organization should define the scope of responsibility of management, provide adequate resources and establish and implement the traceability plan. It should define the key indicators of functioning of the system and carried out internal audits in accordance with the plan to assess the effectiveness of the system. Moreover, it should periodically review the traceability system. An important element of the system is the use of properly selected identification tools and the knowledge to use the gathered information in order to make right decisions.

Specificity of the production and factors affecting the safety of fruit and vegetables

The production of fruit and vegetables is characterized by a number of specific characteristics that affect the quality of the products and ensure the quality and safety of the production process. These are:

- Significant impact on the yield and quality has a course of weather conditions during the growing season.
- Production is carried out in many farms, often for not very large-scale by producers with various stage of preparation, knowledge and experience. For this reason, the quality of products from different farms varies significantly.
- Production is characterized by high intensity and require the use of the large amount of means of production (material and labor).
- The production uses a variety of cultivation technologies, plant caring, methods of harvesting and post-harvesting activities.
- Plants are susceptible to infection, that requires the use of plant protection to achieve the expected yields. Based on the results of monitoring the usage of plant protection products in Poland, it can be stated that among fruit crops, the most intense protection is used on apple and cherry orchards and strawberry plantations. An average consumption of active substances in apple orchards is 9.28 kg/ha, in cherry orchards is 6.02 kg/ha, in strawberry plantations is 6.59 kg/ha and in currant plantations and plum orchards 4.37 and 4, 00 kg/ha respectively (Surawska and Kołodziejczyk 2006). Analyses show that the use of the active substance in fruit crops is correlated with the level of harvest, so the use of pesticides, especially in apple orchards and currant plantations has significant effect on yield-forming (Czernyszewicz 2008). Without protection there is a significant reduction in commercial quality of raw materials and crop losses that excess 80%, for example in the case of carrots.

- In production and marketing there is a large number of species and varieties.
- Fresh fruits and vegetables are quite perishable. They are susceptible to mechanical damage, spoil quickly, the duration of storage depends on the species, growing conditions, time and conditions of harvest, post-harvest treatment and conditions during transport and storage.
- Fruits and vegetables are an important raw material for food and agricultural processing industry. The quality of products manufactured by the agro-food industry is closely related to the quality of raw materials. Basically, it is not possible to produce high quality and safe for the consumer's health products from raw materials that are biologically contaminated, have pesticide residues, toxic metals or are physically contaminated. Mutual relevance of these food chain links shows the share of the industry in the management of harvested fruits and vegetables. The available data show that more than 38% of the harvest of apples, 21% of pears, 80% of cherries and raspberries, and over 90% of colored currant is intended for industry (Study orchards GUS). The share of processing industry in the management of field vegetables ranges from 33 to 36% (Fruit and vegetables market, 2010).

Mentioned features of fresh fruits and vegetables and their production have a significant impact on the parameters of commercial quality and safety for consumers' health. Threat to product safety results from contamination by factors that could cause unfavorable health effects. Contamination of the products in the farm may occur during the process of cultivation, harvesting, transportation, storage, preparation for sale or packaging, or as a result of environmental pollution (Lozowick 2009). The factor, which causes the risk of contamination can be classified as: biological, chemical, physical, and other. Biological agents that may cause a health risk of fruits and vegetables are pathogenic microorganisms (viruses, bacteria, fungi), and toxins produced by them (e.g., patulin), as well as eggs and larvae of insects, mites. Chemical threats in food may occur as a result of improper conduction of agro-technical procedures in the plantations, improper use of fertilizers and plant protection products, deliberate use of illegal pesticides or fertilizers, accidental contamination of the means of production or products due to contamination, failure or environmental disasters. Physical factors, that may cause a safety threat for fruits and vegetables, are: foreign bodies entering raw materials (eg, stones, earth, sticks), derived from raw materials (eg seeds, husks), getting out of the packaging (eg splinters of wood and plastic), during manufacturing cycle process (eg glass), and as a result of negligence of staff (eg, hair, buttons), and non-compliance with GHP and GMP. Providing the proper conditions during the entire production process, including appropriate temperature, humidity, and atmospheric composition, hygiene during storage,

transport and processing, allows you to get the right microbiological quality and safe for the health of consumers products (Czernyszewicz 2012).

Legal requirements concerning horticultural farms related with safety assurance and traceability of the products

In 2001 a statutory duty was introduced, to monitor the crop by preparing records of treatments protection products at the stage of primary production by farmers (Law of 16 February 2001 amending the Act on the protection of crops Coll. Laws No. 22, item_ 248). Currently the farm should collect information on the crop species and varieties, used fertilization and plant protection products. In accordance with the Art. 67 paragraph 1 of the European Parliament and Council Regulation (WE) No 1107/2009 and the law on plant protection products Directive of 8 March 2013, information about the usage of plant protection products includes: the type of the crop, its surface, time of the treatments, name of applied pesticides, their dosage, the surface on which procedure was performed, the method of implementing the requirements of integrated pest management by indicating the reasons for the measure. This data cover the period from the end of the previous harvest of crops until the harvest of monitored cultivation. The information relates to the data about the use of plant protection products in the disinfection, herbicidal procedures, seed treatment, chemical protection treatment against diseases and pests, and others performed during the growing season. Documentation concerning the use of plant protection should be kept for a period of three years. According to the law on plant protection, Main Inspectorate of Plant Health and Seed Inspection (PIORiN) supervise trading and use of plant protection products. On behalf of the Chief Inspector of PIORiN in collaboration with Voivodeship Inspectorates of PIORiN, control on pesticide residues is also conducted.

The use of fertilizers is also supervised by state authorities. In accordance with the Art. 32 of the Act on fertilizers and fertilization, Inspectorate for Environmental Protection monitors compliance with the regulations that concern the use and storage of fertilizers. The Act indicates that only fertilizers and plant conditioners, that are allowed of trading on the basis of art. 3 paragraphs 1 and 2, Art. 5 or Regulation No 2003/2003 and in a manner which does not endanger human or animal health or the environment (Article 17), should be used. Documentation of the origin of the fertilizer should be kept for two years (Article 40). One of the conditions of the proper marketing and the use of fertilizers is their proper labeling. According to the Article 9 of the mentioned Act, information that allows identification of the fertilizer should be placed on the packaging or label attached to every fertilizer that is placed on the market. Those include: the type of the fertilizer, data about the declared

nutrient content, data on the form or the solubility of nutrients, fertilizer's trade name (if it has been given), name and surname and place of residence and address or name and registered office and address of the manufacturer of the fertilizer that is produced in Poland, and the importer - for fertilizer imported from other countries, information about the net weight of the fertilizer, shelf life and instructions for usage and storage of fertilizer.

Unpublished preliminary study conducted by Kwiatkowska, under the guidance of the author, shows that the documentation on the use of fertilizers and plant protection products leads almost 90% of growers. Most often, growers note the date of application plant protection products and fertilizers (89%), the dose and the amounts of pesticides and fertilizers (82%), and also the place and the area of application of pesticides and fertilizers (80%), significantly less likely they record the reasons for their use (49%).

Ensuring the traceability in the production of fruit and vegetables

The ability to trace the movement of the means of production through all stages of the production of fruit and vegetables is illustrated by Figure 1.

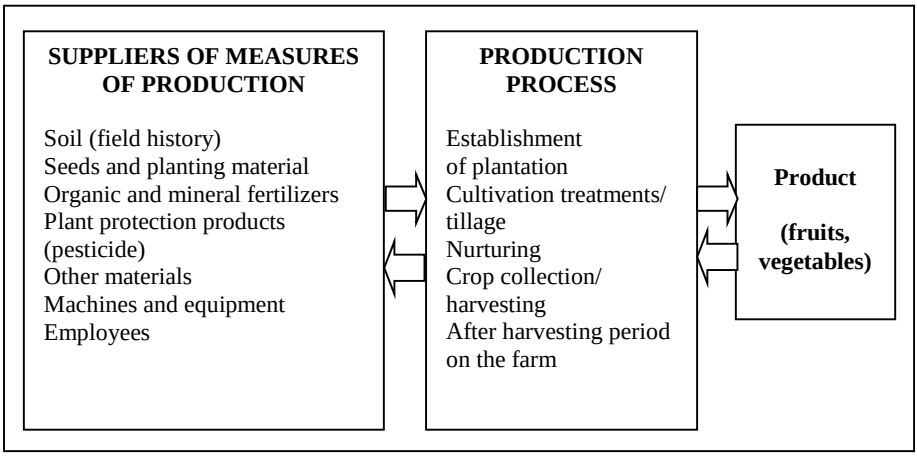

Figure 1. General model of traceability that allows tracing of production materials and the history of fruit and vegetable production

Source: own description

The model takes into account the whole process of fruit and vegetable production, starting from the establishment of the plantation, through tillage and nurturing, harvesting crops and post-harvesting stage, which includes transport crops from the field to the farm, the initial cooling of the products and their storage at the farm until sale. To ensure traceability of products, it is

important to collect information not only about how to perform procedures in the process, but also about used means of production, including labor. In practice there are cases of using unauthorized fertilizers and plant protection products, buying starting material (seeds, cuttings) contaminated with virus, inefficient use of sprayers, contaminated equipment, etc. All collected information could be useful for grower to prove to the competent supervisory authorities, applying principles of good agricultural practice and consistent with the law, if necessary, to come to the source of the problem.

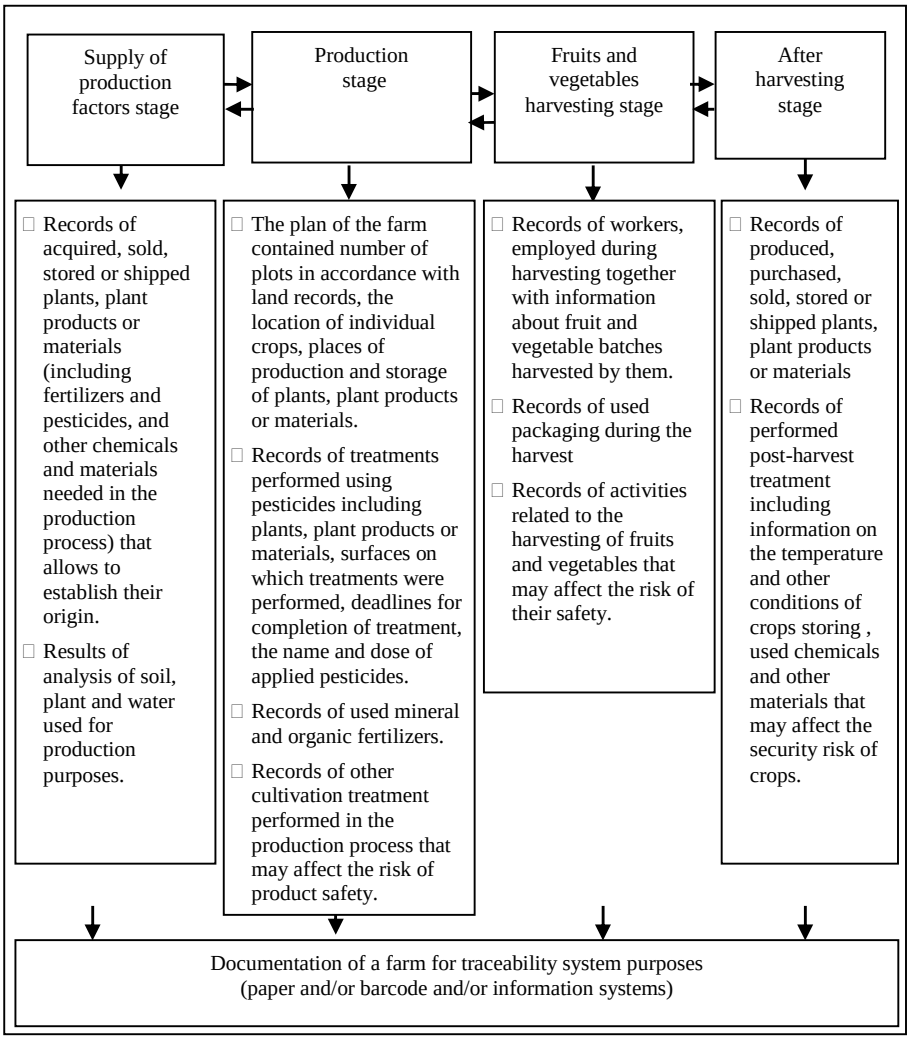

Figure 2 Model of the traceability in the primary production, taking into account the production process, the type of information collected and created documents in the horticultural farm

Source: own description

The model, shown in Figure 2, takes into account the type and scope of data at all stages of production, that are taking place in the horticulture farm, and created documentation.

Collected data may be present in the form of paper documents or, in a properly designed for this purpose, information systems or barcodes. It is important to define key indicators (data) for the efficient functioning of the traceability system and the information resulting from legal regulations, because these are mandatory. In planning of appropriate indicators, determination of a farm place in particular food chain and associated with it requirements of interested parties from surrounding, might be helpful. Data records that are suggested in the model, take into account the legal requirements and other data, helpful in controlling the origin and movement of raw materials, semi-finished products that are used on the farm in the technological process and in tracing the history of the production of the products, their distribution and location in a horticultural farm. Intended traceability system should be characterized by the lowest costs, that are necessary to ensure the proper functioning of the system. The farm owner should periodically review the system, especially in the situation of the regulatory changes and directions for disposal of products. The gathered information can, and should be used to make decisions in the current farm management and production planning in subsequent production periods.

Conclusion

Fruits and vegetables, due to the nature of production, are exposed to various forms of pollution, which can cause a threat to their safety. As a result from time to time "scandal" appears, that contribute to the decline in the income of producers and make periodic loss of consumer confidence in these products. The quality and safety of fruit and vegetables is important because they are an important component of a rational diet, are consumed mostly in the fresh state, and are the basic raw material for the processing industry. In the production of processed food, raw products quality is essential. One of the most important element to ensure the quality and safety of these products is mandatory implementation of the traceability system at the stage of primary production. Properly designed and implemented traceability system is essential for the efficient withdrawal of contaminated products from the market and to allow to trace the source of problems and to inform consumers or people responsible for the control of food. The ability to trace the movement of means of production and products through all stages of production of fruits and vegetables enable proposed models of traceability system, that take into account the entire production process from harvesting of plantation crops and post-harvest stage. The models include the collection of information not only about how to perform procedures in the process, but also about applied

production means, including labor. Suggested data coverage includes: legal requirements and other, helpful in controlling the origin and movement of raw materials, intermediates used in the process, traceability of the production history of horticulture farm products and their distribution and location.

It is recommended that the collected information is continuously updated due to changes in laws, regulations and directions of sales of products from the farm

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PN-EN ISO 22005:2007 Identyfikowalność w łańcuchu pasz i żywności. Ogólne zasady i podstawowe wymagania przy projektowaniu i wdrażaniu systemu.

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BUSINESS PROCESS ORIENTATION - EMPIRICAL SURVEY RESULTS

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Introduction

The emergence of Business Process Orientation is associated with a change of paradigm in the business management (Preißner 2010; Czyż-Gwiazda 2013; Czyż-Gwiazda 2011). Functional paradigm, characterized by the search for organizational effectiveness in traditional functional areas was superseded by the paradigm of the process. In the new paradigm, the existing specialization of work, was supplemented by the need to view organizations from the perspective of end-to-end processes, value chain perspective and even the systems of value chains. It requires changes in the organization not only structural but also cultural. It requires changes in style of management the organization and in style of thinking about the organization (Czyż-Gwiazda 2011).

BPO emerged on the basis of two concepts development: Total Quality Management (TQM) and Business Process Reengineering (BPR). These two paths are distinguished among others by C. Armistead and S. Machine. They stress that TQM and BPR lead to focus managerial attention on the organizational processes (Armistead, Machine 1997). This is emphasized also by other authors (Hung 2006; Skrzypek, Hofman 2010). But the foundations for BPO have already been formed in the classical school of management. The other sources of BPO are: Enerprise Process Management (EPM) and Process-based competition.

The purpose of this paper is to present the survey results concerning BPO maturity measurement of selected polish organizations as well as to show results of the comparative analysis between companies from Poland, Serbia and Ukraine.

The paper is divided into 9 sections. Introduction is a first section. The next sections present: theoretical background of BPO and the measurement of BPO maturity. After the theoretical insight there were presented empirical

surveys assumptions: hypotheses and research questions, as well as the methodology. The next sections show: sample description and survey results. Last section includes conclusions and implications. References are at the end of the paper.

Theoretical background

Focusing on system thinking developed by Senge (Senge, et. al. 2008) and value chain concept developed by M. Porter (Porter 1985) coincided with the popularization of TQM philosophy in the mid-1980s. Therefore processes have become an important part of TQM. G. Rummler and A. Branche used M. Porter's value chain to describe the process improvement. They emphasized that the way to overcome the problems arising at the interface between functional areas is to notice end-to-end processes and skillful process management. Areas at the interface between functional areas they called white spaces (Rummler, Ramias, Rummler 2010). But the roots of process management in the context of quality management go deeper. In the 1920s quality management was developed and largely supported by achievements of W. Shewhart called "the father of statistical quality control". His work has been extended in next decades by W. Edwards Deming, J. Juran, P. Crosby.

The development and popularization of TQM is regarded as the first wave of interest in the development of BPO. A characteristic element of this wave was the principle of continuous improvement (Dahlgaard, Dahlgaard-Park 2006). In addition, quality management tools such as statistical process control were based on the understanding of the processes (Armistead, Machin 1998). Many authors emphasize that the most important was (and still is) the inclusion of top management to quality and focus on customer satisfaction (Smith 2007). In practice the interest in quality management process was noticed by the increasing number of organizations with certified quality management system in compliance with ISO standards. And although TQM over time started to lose its popularity and freshness - as organizations began to seek something new - a process of continuous improvement remained in the minds of many entrepreneurs and became a regular part of business management (Boehringer 2009).

Another reason for the focus on processes - second wave of process management - was Business Process Reengineering (BPR), which promotes a radical change in business processes. In business practice there are organizations, which started going in the direction of process orientation by implementation only TQM, only BPR or TQM and BPR together (Armistead, Machin 1997). BPR revolution started M. Hammer and J. Champy in the early 1990's. In the book "Reengineering the Corporation" described a radical improvement in organizational performance through the incorporation of

information technology in large-scale projects to redesign the existing methods of work in organizations (Hammer, Champy 1995). BPR has become the second wave of the evolution of process management. This wave is characterized by faster and radical steps compared to the slow, but successive small steps of continuous improvement of the organization, which are characteristic for the first wave. BPR aimed to redefine and redesign of business processes, eliminate activities that do not bring added value and use of information technology (Armistead, Machin 1998). M. Hammer, J. Champy, T. Davenport stressed that organizations should think in terms of processes. Similarly did it M. Porter in the value chain or G. Rummler in seeing not only job level and process level but also the level of the whole organization.

According to M. Hammer absorption of TQM and BPR principles by business, focusing on processes, resulted in the interest in BPO (Hammer 1999). The common area of the first and second wave is the idea that both the process of continuous improvement and radical technological changes are necessary in order to achieve operational excellence in the long term. Achieving operational excellence, which is the objective of the first and second wave of processes management evolution, is performed through the implementation of e.g. Six Sigma, which is based on the implementation the aggressive, project-based statistical quality control techniques in order to drastically reduce the variations in the results, which should contribute to improved financial performance of the organization (Boehringer 2009; Dahlgaard-Park 2009; Dahlgaard-Park, Dahlgaard 2007). Studies of Armistead, Pritchard and Machin confirmed that the development of process management resulted from development of such variables as: TQM, BPR, use EFQM model and create a map of key processes, which takes into account customers requirements (Armistead, Pritchard, Machin 1999).

The third wave of the evolution of process management is connected with the work of Hammer "Beyond Reengineering" (1996) and work of Ostroff "The Horizontal Corporation" (1999) (Harmon 2007). This wave concerns with the evolution of software for managing the organization as a whole. Management of all processes - across the organization - becomes the focus of this wave. It is about the Enterprise Process Management (EPM), which is related to the improvement, the innovation and end-to-end business processes, which lead the organization to agility. This means that EPM creates organizational infrastructure for continuously delivering excellent process performance for external customers. In contrast to the first two waves, focusing on providing operational excellence, the third wave emphasizes on strengthening/establishing the excellence.

Slightly different the third wave sees Smith, who calls it the wave of the design of process-oriented organization. This wave aims to create a process-

oriented organizational structure (Smith 2007). The process-oriented structure should help the organization to perform its key processes in the most effective way and to deliver value both the company and customers. The organizational structure design should incorporate a new process-oriented approach in such a way that do not lose the benefits of a functional approach, but rather to strike a balance between the two. As functional organization can suffer from a dearth of process efficiency, so the process-oriented organization may suffer from a lack of functional experts. In business practice organizations started searching for process performance. Process results have become key factors in the decision-making process especially at the highest management level.

The last, fourth wave, which can be found in the literature, indicates R. Smith and GOAL/QPC (Smith, 2007; Boehringer 2009). This wave is called process-based competition. Creating synergy between strategy and processes becomes crucial for the fourth wave of process management evolution. Strengthening the excellence through information technology enables organizations to provide greater value to key customers at the same time lower costs. This combination of efficiency and effectiveness creates a strategic advantage, at the both present and new market. The process-based competition is constantly evolving, as is described by Smith, Spanyi, Kim and Mauborgne (Smith 2007; Spanyi 2007; Kim, Mauborgne 2010). The four waves, which are main sources of BPO, are presented in Figure 1.

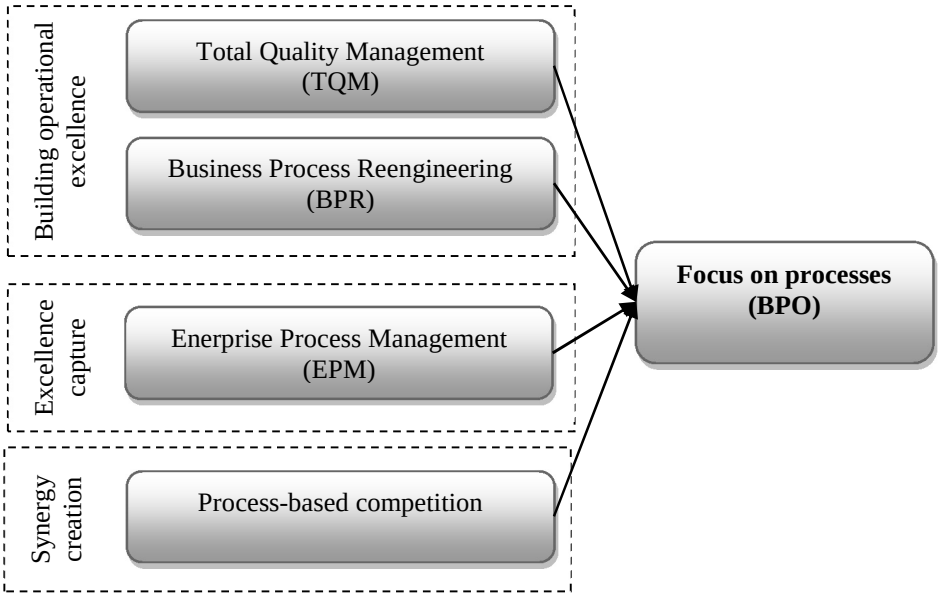

Figure 1. The four main sources of focus on processes in organizations

Source: own work

The implementation of BPO is the way to increase the flexibility of the organization, because it allows increasing the speed of its activities, reaching and serving effectively the needs of customers and reducing the cost of its operation. According to Lindfors BPO enables also to achieve such results as (Lindfors 2000): organizational commitment, organizational management, customer and value orientation, transparency of processes, process integration, process efficiency. In management theory was appeared and popularized also new term: agility organization (Lisiecka 2010).

Business Process Orientation – maturity measuring

According to McCormack and Johnson there are several components of BPO maturity (McCormack, Johnson, Walker 2003). They include: process view, process jobs, process measurement and management systems. There are also two additional components, supporting these principal components. These are: the process structure and the customer-focused process values, and beliefs. They provide the main dimensions to work interactively (McCormack et al. 2009). On the basis of formulated by McCormack and Johnson main dimensions of BPO maturity and in accordance with studies published in the literature by other researchers, the BPO maturity can be measured by evaluating the following characteristics (see Table 1).

Table 1. Business Process Orientation – characteristics

Symbol	Characteristics	Dimension
OP1	The average employee views the business as a series of linked processes	Process view
OP2	Process terms such as input, output, process, and process owners are used in conversation in the organization	
OP3	Processes within the organization are defined and documented using inputs and outputs to and from our customers	
OP4	The business processes are sufficiently defined so that most people in the organization know how they work	
OP5	Implementation of IT is based on the processes, not on functions	
OP6	Jobs are usually multidimensional and not just simple tasks	Process jobs
OP7	Jobs include frequent problem solving	
OP8	People are constantly learning new things on the job	
OP9	Process performance is measured in the organization	Process measurement and management systems
OP10	Process measurements are defined	
OP11	Resources are allocated based on process	
OP12	Specific process performance goals are in place	
OP13	Process outcomes are measured	
OP14	An on-line control of information quality in processes has been established	
OP15	Information flow through process is continuous and efficient	

Source: (Skrinjar, Bosilj-Vuksic, Indihar-Stemberger 2008)

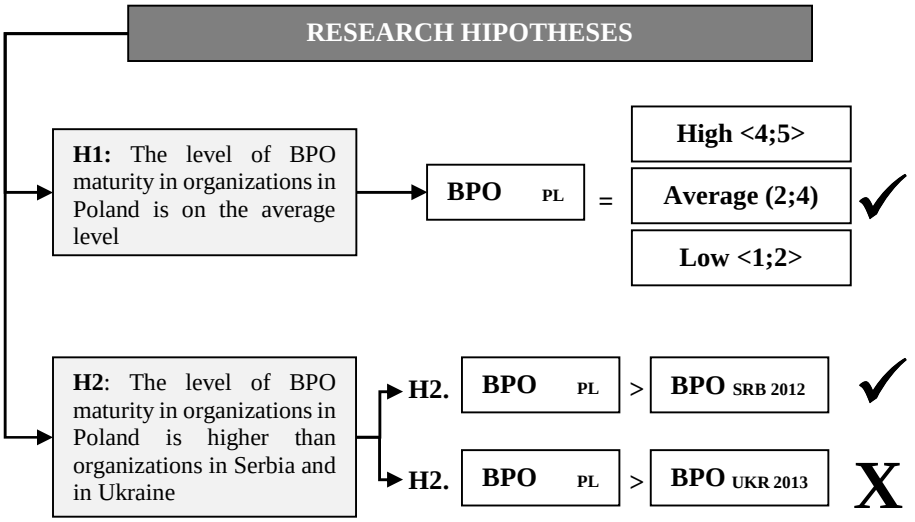

Figure 2. Research model

Source: own work

The characteristics defined in Table 1 were used in surveys and are a basis for assessing the maturity of BPO in organizations in Poland, Serbia and Ukraine.

Hypotheses and research questions

Review and analysis of the literature in the field of Business Process Orientation and assessment of its maturity was a base for formulating following research questions:

1. What was the level of BPO maturity in organizations in Poland in 2012?
2. Does the level of BPO maturity in organizations in Poland differ from the level of BPO maturity in organizations from abroad?

The aim of the research was to verify the following hypotheses:

- ✓ H1: The level of BPO maturity in organizations in Poland in 2012 is on the average level.
- ✓ H2: The level of BPO maturity in organizations in Poland is higher than organizations in Serbia and in Ukraine.

The second hypothesis required clarification. Therefore, following detailed hypotheses were formulated to the second hypothesis:

- ✓ H2.1: The level of BPO maturity in organizations in Poland is higher than organizations in Serbia.
- ✓ H2.2: The level of BPO maturity in organizations in Poland is higher than organizations in Ukraine.

Hypotheses that have been formulated for the purpose of empirical studies became the basis for the development of a research model (Figure 2).

Methodology

The questionnaire with the characteristics presented in the table 1 was a basic research tool used in the surveys. The foundation for the conducted surveys was the survey which I made in 2010 in Poland concerning measurement of business process orientation maturity. In 2012 previous survey was modified (instead of the 7-point Likert scale there was used a 5-point Likert scale, because previous survey results have shown that it is not needed the use so sensitive scale to the assessment of BPO statements) and spread to the organizations from abroad. In first step - except organizations from Poland - were researched organizations from Serbia (2012) and then also organizations from Ukraine (2013). The collected empirical material was analyzed after each survey. As I mentioned above the five-point Likert scale was used in the questionnaire for conducting the survey in each country. The task of respondents was to indicate their opinion for each statement included in the questionnaire according to the five-point scale (from 1 – No, I definitely do not agree, up to 5 – yes, I definitely agree). The questionnaire consisted of fifteen statements concerning the business process orientation in the organization.

The questionnaire was mailed electronically to the organizations in Poland, Serbia and Ukraine. The aim of such structured sample was to allow a comparison between achieved results in each country. The survey was addressed to the representatives of middle and senior management, in particular to the quality managers. In Poland the reference list received from one of the management systems certification bodies was used in the survey. Organizations from Serbia were selected for this survey because there was a possibility to reach and collect data from this country. The partner for the data collection on the basis of designed questionnaire comes from University of Kragujevac in Serbia. In Ukraine the partner represents the National Technical University of Ukraine, Kiev Polytechnic Institute (NTUU, KPI).

Generally in 2012 the questionnaire was mailed to about 680 organizations in Poland and 100 organizations in Serbia. From the beginning of 2013 the questionnaire was mailed also to 342 organizations in Ukraine. As the results the 86 questionnaires were received in Poland (they represent about 13% of the surveyed organizations in Poland). The next 80 questionnaires were received from organizations coming from Serbia (80% of the surveyed organizations in Serbia) and 93 questionnaires were received from organizations coming from Ukraine (27% of the surveyed organizations in Ukraine). See table 2.

Table 2. Survey sample

Country	Survey population	Survey sample	
	N	n	%
PL 2012	680	86	13%
SRB 2012	100	80	80%
UKR 2013	342	93	27%

Source: own work

Below are presented the results of the surveys. Excel was used for analyses of collected data.

Sample description

In Poland, among the organizations that responded to the survey, dominate service organizations. They represent circa 52%. Other surveyed organizations represent or mixed (service-production) or other organization's types such as: local government unit, manufacturing companies and non-profit organizations. Similarly the situation looks like in Ukraine. There also dominate service organizations. Their participation is high. It is almost 70% of all surveyed organizations. For comparison, among the surveyed organizations in Serbia dominate manufacturer organizations, which represent nearly 60% of all respondents. On second place are service organizations - 32% of surveyed organizations. Among the respondents are also non-profit organizations and local governments unit. Respondents represent different sectors – see Fig. 3.

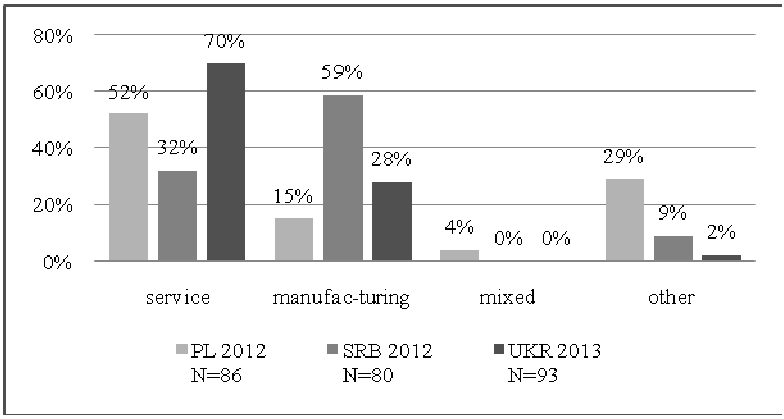

Figure 3. Sector description of surveyed organizations

Source: own work

The study consists of the companies of all sizes. Among the organizations surveyed in Poland are three main groups. The first group consists of companies employing up to 50 people (31%), the second employing up to 250 people (27%), and in the third group there are large organizations employing more than 250 persons (25%).

Also among the organizations surveyed in Serbia strongly dominate organizations employing up to 50 people - nearly 40% of all surveyed organizations. However on the second place are micro organizations, which employ only up to 10 people - 24% of all surveyed organizations in Serbia. On the third place are organizations employing up to 250 people - 19%, and next are large organizations, employing more than 250 people - 17%.

This strongly domination of small organizations (employing up to 50 people) is clearly seen among the organizations surveyed in Ukraine as well as. In this case the domination is equal to 46%. The others organizations represent either medium or large organizations. Micro organizations amount to only 11% of all surveyed organizations in this country. The size comparison of surveyed organizations in different countries is presented on the Fig. 4.

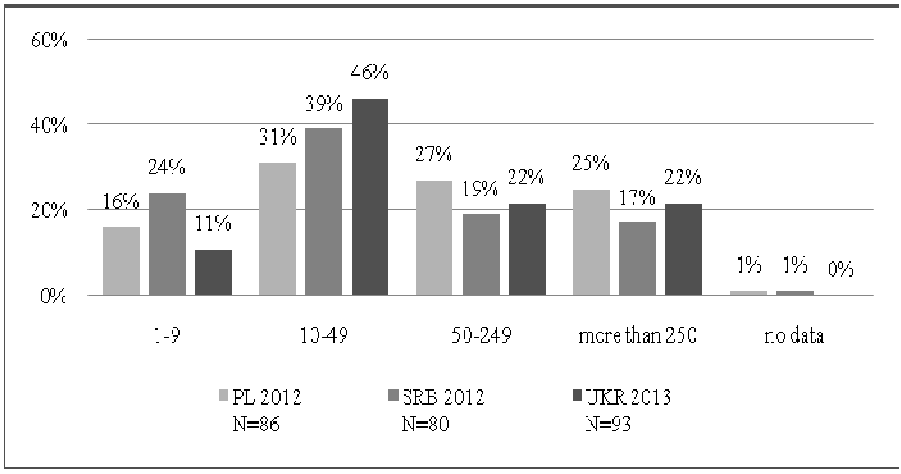

Figure 4. Size description of surveyed organizations

Source: own work

To sum up, it appears that small organizations represent the biggest group. On the next place are medium, large and small organizations.

The analysis of the data shows that organizations with an implemented and certified quality management system according to ISO 9001 standard are dominated (see Fig. 5).

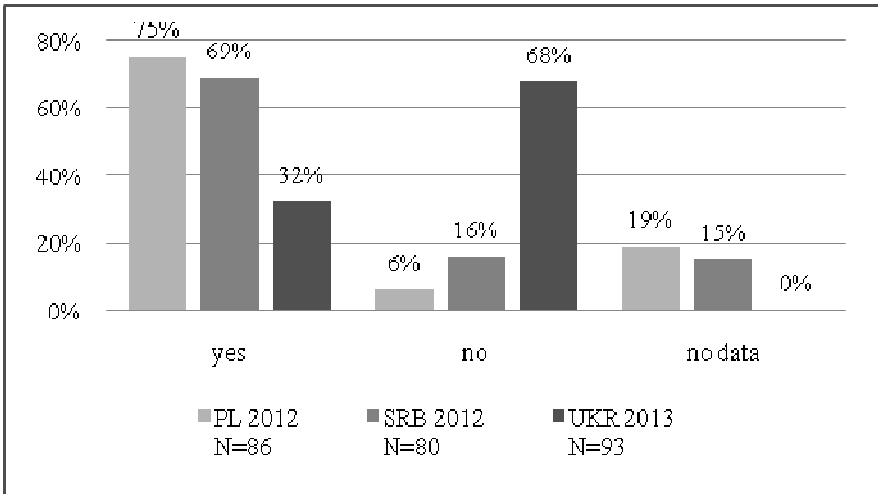

Figure 5. Surveyed organizations with ISO 9001 certificate

Source: own work

In Poland organizations with ISO 9001 represent 75% surveyed organizations. In Serbia they represent 70%. But there is a difference between these two countries and organizations from Ukraine. In Ukraine surveyed organizations mainly have not the ISO 9001 certificate (68%). Those organizations which have it amount to 32% of all surveyed population in this country.

Survey results

At the beginning of the study the attention was focused on the verification of the first hypothesis: the level of BPO maturity in organizations in Poland in 2012 is on the average level. Therefore the average value of BPO maturity was calculated for all organizations represented by each country. Then an assessment of the BPO maturity was made for surveyed organizations in Poland. A 5-point Likert scale was used for the evaluation and the following assumptions about the BPO maturity were established (Fig. 6):

– average value equals between 1 and 2 points means low BPO maturity level <1,2>;
– average value equals between 2 and 4 points means average BPO maturity level (2,4);
– average value equals between 4 and 5 points means high BPO maturity level <4,5>.

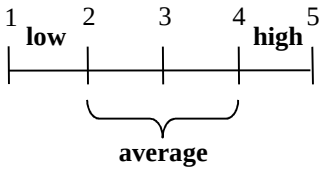

Figure 6. BPO maturity evaluation - assumptions

Source: own work

Analysis of the data indicates that organizations in Poland in 2012 evaluated the BPO maturity of their organizations at a level equal to an average of 3.54 (see Fig. 7). According to the accepted assumption the evaluation amounting to 3.54 points represents the average BPO maturity level. It must be noticed that this result is the assessment made by respondents representing surveyed organizations which were certified in accordance with ISO 9001. This means that in general in these organizations the BPO maturity level can be higher than organizations without quality management system.

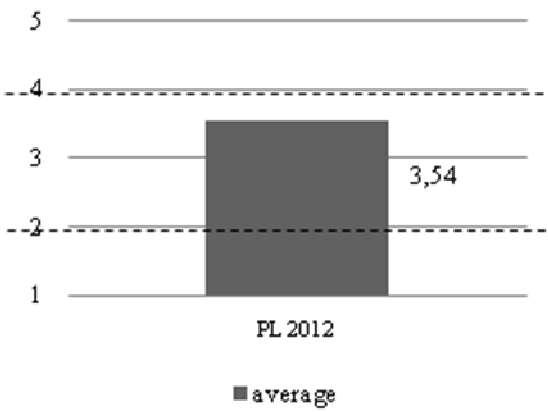

Figure 7. Business Process Orientation maturity – average for organizations surveyed in Poland in 2012

Source: own work

Based on the surveyed results the first hypothesis was verified positively, which means that on the established assumptions there is no reason to reject the conclusion that the level of BPO maturity in the surveyed organizations in Poland in 2012 is on the average level.

Also the detailed analysis confirmed that all of used statements are equal to the number between 3 and 4 points (see Fig. 8).

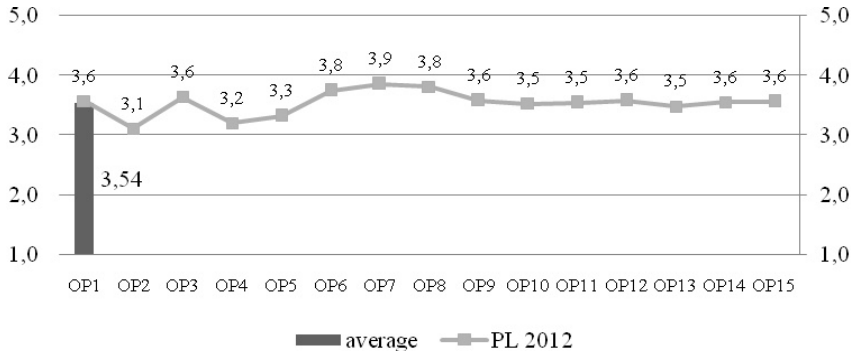

Figure 8. Business Process Orientation maturity – detailed data for organizations surveyed in Poland in 2012

Source: own work

The low level had three statements: OP2 (process terms such as input, output, process, and process owners are used in conversation in the organization – 3,1), OP4 (the business processes are sufficiently defined so that most people in the organization know how they work – 3,2) and OP5 (implementation of IT is based on the processes, not on functions – 3,3). At the same time the higher value had reached such three statements as: OP7 (jobs include frequent problem solving – 3,9), OP6 (jobs are usually multidimensional and not just simple tasks – 3,8) and OP8 (people are constantly learning new things on the job – 3,8).

The second research question was: does the level of BPO maturity in organizations in Poland differ from the level of BPO maturity in organizations from abroad? The results of international comparison shows that organizations in Serbia evaluated BPO maturity level in some cases significantly lower than in a case of organizations from Poland and from Ukraine. Interesting is also the fact, that in some cases the BPO maturity level of organizations from Ukraine is slightly higher than in organizations from Poland although in Ukraine among surveyed organizations were also organizations without the ISO 9001 certificate (Fig. 9).

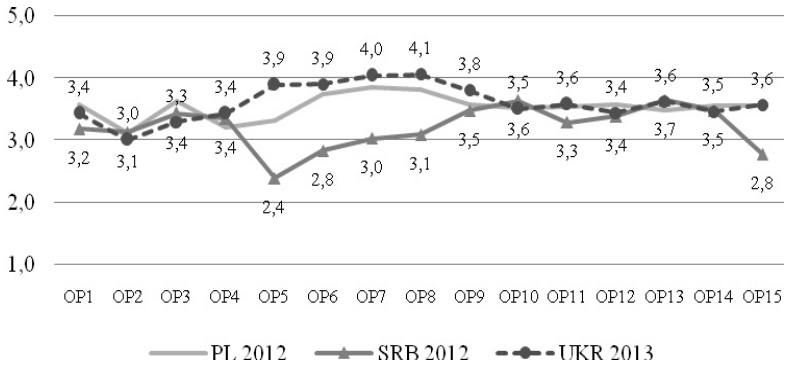

Figure 9. BPO maturity level – international comparison

Source: own work

Significant fact is that all of statement's results are equal to the number between 2 and 4 points. The final global result of the BPO maturity level for organizations in Ukraine is at the higher level than organizations in Poland. At the same time the BPO maturity level for organizations in Serbia is at the lower level than organizations in Poland. But the interesting fact is that the differences are insignificant in the overall assessment because all average scores oscillate between 3 and 4 points on the 5-point Likert scale (Fig. 10). It means that it is still an average level of BPO maturity instead of the researched country.

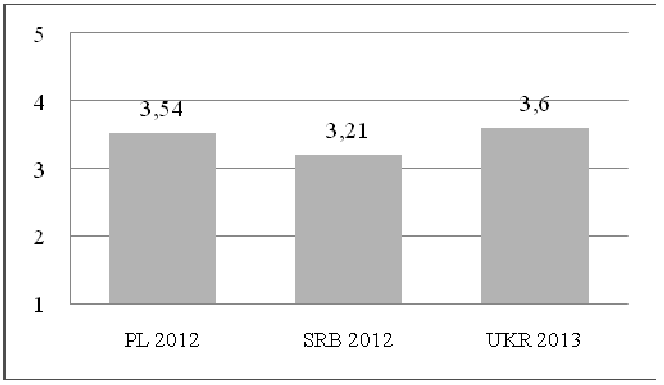

Figure 10. BPO maturity level for surveyed organizations from Poland, Serbia and Ukraine

Source: own work based on survey results

In Poland the average level of BPO maturity equals to 3,54 in 2012, for the organization in Serbia the average is equals to 3,21 and in Ukraine amounts to 3,6. Average overall rating of BPO maturity oscillates around 3 and 4

points, which seems to be typical not only for national organizations, but also for those from abroad. Also in any detailed cases of 15 BPO characteristics the average score did not exceed 4 points.

Conclusions and implications

The conducted survey allowed answering the research questions. The results confirmed that the level of BPO maturity in organizations in Poland in 2012 was on average level. Respondents assessed it at the level equal to an average of 3,54 in 5-point scale. According to the accepted assumption the evaluation amounting to 3.54 points represents the average BPO maturity level. It means that there is no reason to reject the first formulated hypothesis.

The second research question was: does the level of BPO maturity in organizations in Poland differ from the level of BPO maturity in organizations from abroad? The answer is yes, but differences are very small. The results of international comparison shows that organizations in Serbia evaluated BPO maturity level in some cases significantly lower than in a case of organizations from Poland and from Ukraine. It means that the first detailed hypothesis H2.1 was confirmed. Interesting is also the fact, that in some cases the BPO maturity level of organizations from Ukraine is slightly higher than in organizations from Poland although in Ukraine among surveyed organizations were also organizations without the ISO 9001 certificate. It cause that the second detailed hypothesis was rejected.

But the interesting fact is that the differences are insignificant in the overall assessment because all average scores oscillate between 3 and 4 points on the 5-point Likert scale. Average overall rating of BPO maturity oscillates around 3 and 4 points, which seems to be typical not only for national organizations, but also for those from abroad.

The results are limited to surveyed samples. It means that the results and conclusions do not apply to whole population of organizations in Poland, Serbia and Ukraine.

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THE IMPACT OF PRAXEOLOGY ON QUALITY MANAGEMENT

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Introduction

Product and services quality is by no means a new phenomenon. The history of humanity indicates that the problem of limiting the risk of product defects is something that has been known for a long time. Businesses, active over the ages, have striven to elaborate certain principles of responsibility, the purpose of which was to prevent the manufacture of defective products. The sources of modern understanding of quality in general, and in particular quality assurance and quality management, can be traced back to the works of the greatest ancient philosophers: Plato, Aristotle, Lao Tsu and Confucius. We owe systemic quality management to the theoreticians and practitioners of this field, mainly those of the latter half of the 20th century with Edward W. Deming being the best example. Few people have noticed the influence of praxeology i.e. the study of human conduct. One of the co-founders of this philosophy was Tadeusz Kotarbiński (Kotarbiński 1968, 1973, 2003), undoubtedly one of the greatest philosophers of modern times. In this paper, I am attempting to demonstrate that many of Kotarbinski's thoughts constitute a concise and more profound analysis of the foundations of both TQM and ISO 9000-series standards.

Principal models in quality management

It is in the interest of each organization to be profitable and to develop. A basic condition for the successful development of an organization is not only customer satisfaction but also by all interested parties – shareholders, employees, suppliers and the local community. Of the various forms of management company management includes quality management. Quality has become a basic requirement amongst the competition. Talking of quality management, or as some would prefer it, management through quality, reference is almost always made to the leading authorities in the field: Armad

V. Feigenbaum, Edward W. Deming, Joseph M. Juran, Philip B. Crosby, Kaoru Ishikawa, Genich Taguchi. The above are the founders of the modern approach to product and service quality. Their concepts are not always coherent which has led to the world's most developed countries to adopt a somewhat different approach towards quality. One may distinguish three different management styles in the case of the present economic triad: USA, Japan and the European Union.

The American style of management, based on marketing, is rooted in the philosophy of Plato, who presents a subjective approach towards quality, believing that quality may be understood only through experience. This approach of responsibility for quality has been reflected in *Total Quality Control* – TQC.

The European management style makes reference to the philosophy of Aristotle, who included the term "quality" amongst ten so-called categories, alongside: quantity, relationship, substance, place, time, situation, disposition, activity and process. Quality, according to Aristotle, may be defined through specific traits, for this reason "a thing is the thing it is". Through a collection of traits one may differentiate one product from another. This approach towards quality, strengthened in medieval craft, has been further developed in the process leading to the normalization of European states, and ultimately in the international elaboration of ISO series 9000 systemic norms.

A specific approach to quality is presented by the Japanese management style which is based on the philosophy of *kaizen*[1]. The sources of this approach may be traced back to the Chinese philosophy of Lao Tsu (lived c. 500 BC) and Confucius, as well as native tradition formulated over centuries. Similar as in the case of Plato quality is linked to experience, which is treated as a starting point towards further action. Experience, it transpires, indicates what can be improved, perfected (product, process, system, customer service). The outcome of Japanese experience (and to a certain degree American as well) is the concept of complete quality steering (*Company Wide Quality Control* – CWQC). The model of fashioning responsibility for product quality is presented in fig. 1.

The choice of a given quality management model, apart from the impact of leading authorities in the field, is also the result of different mentalities in Europe, America and Japan. However, irrespective of the chosen quality assurance model, the objective is one and the same – attaining the highest possible level of products and services whilst maintaining moderate and acceptable costs. The concepts put forward by leading authorities on quality have led to the preparation of Total Quality Management (TQM) principles.

[1] Kaizen is a Japanese philosophy of management, whose essence constitutes improvement; constant perfection pertaining to everyone, including top management, middle and lower management levels, as well as rank and file employees.

TQM, referred to at times as TQM philosophy (undoubtedly an exaggeration), is an ordered structure of managing a company in order to attain the best results. The TQM concept is regarded as a universal method of improving the effectiveness of human behaviour. Improving the effectiveness of human behaviour, however, is also a fundamental issue considered by praxeology.

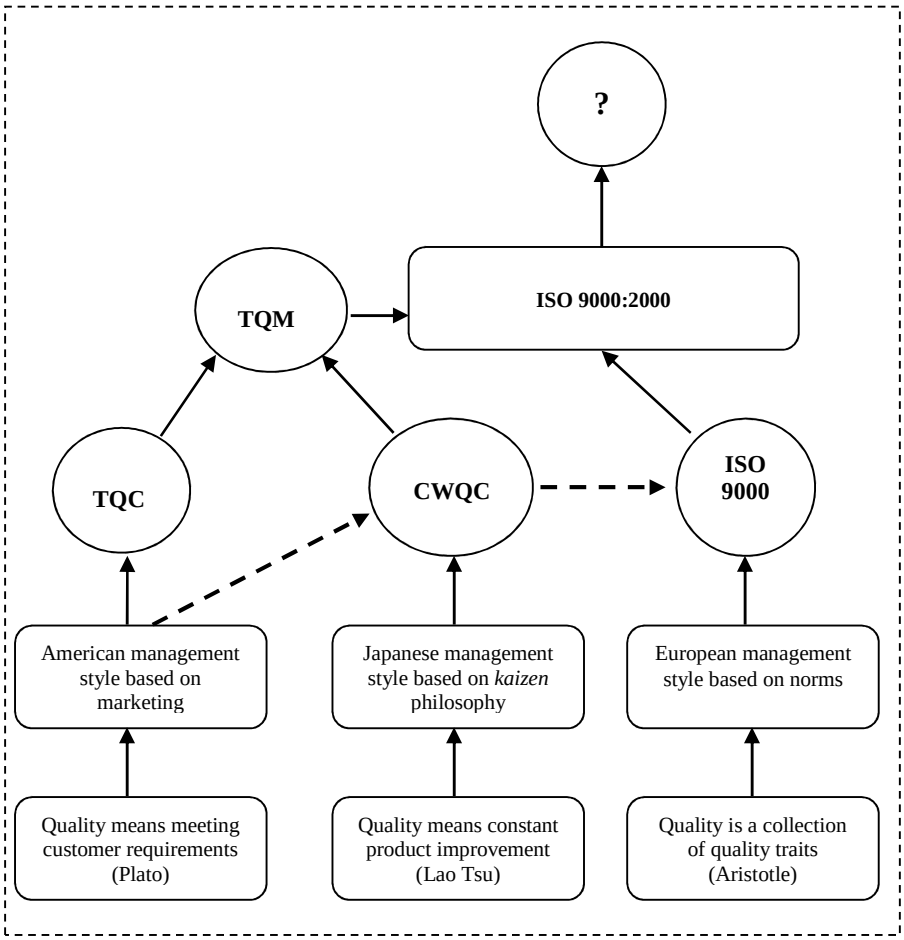


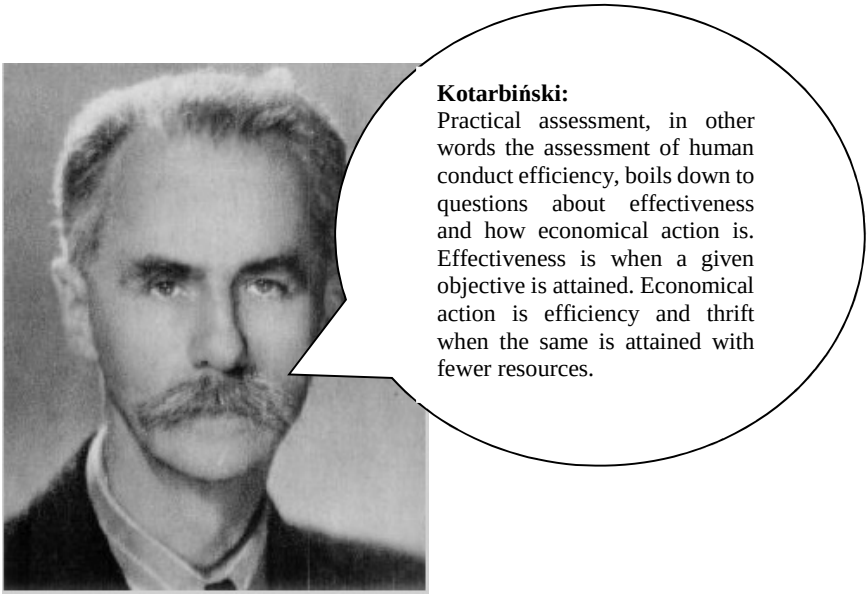
Figure 1. Model of fashioning responsibility for product quality

Source: Zymonik 2002

Quality in praxeology issues

Praxeology is the theory of effective conduct. It is a branch of learning concerning every kind of intentional human conduct, in particular rationality and the effectiveness of its methods. The expression "praxeology" was first employed by the French philosopher Louis Bordeaux in 1882. The first

programme of praxeology was sketched by the French sociologist Alfred Espinas. Praxeology was the main area of study and scientific attainments by T. Kotarbiński, who was its propagator and to a large degree its creator. In his work *Hasło dobrej roboty* (Good Work Slogan) Kotarbiński wrote as follows (Kotarbiński 1968): "What we do can be evaluated in a number of ways. What is vital is to assess action for its usefulness and purposefulness, in other words for its efficiency, which boils down to main assets – effectiveness and thrift. Effectiveness refers to that which is a good means for attaining an objective and does not lead to the making of mistakes. Thrift, in other words economical behaviour, means taking care and being effective in using space, time, material, tools and energy" (Kotarbiński 1968).



Praxeology is the study of those aspects of human action that can be grasped a priori; in other words, it is concerned with the conceptual analysis and logical implications of preference, choice, means-end schemes, and so forth.

The main task of the praxeology is, aware of the wording, the justification and the systematization of recommendations and a cautionary tale about the efficiency of action, in other words their practicality. Characterizing some type of act as a fitter or less efficient, as a more or less practical, judge in a certain way this type of action. But this is a special form of evaluation. You can call the consumer assessment, utilitarian, as opposed to emotional assessments, expressing our attitude toward sensitivities to what we want. In short, the assessment of the practical, that is agility, it comes down to questions about effectiveness and cost-effectiveness. At the same time can do

more or less in accordance with the objective. And when the action is economic? Oh, this is two different manifestations: performance and savings. Efficiency who worked with their own resources, and so the disposable stuff and energies, he went around to the Congregation 's. Ideal efficiency reaches this, who's going to be quite energetic and quite economical, fairly attentive about their resources, who therefore consume so much as needed, and only as much as they want, to what decided to cause. Such a standard would be us stood before the eyes of the thoughts that will continue.

The modern theory of value widens the scientific horizon and enlarges the field of economic studies. Out of the political economy of the classical school emerges the general theory of human action, praxeology. The economic problems are embedded in a more general science, and can no longer be severed from this connection. No treatment of economic problems proper can avoid starting from acts of choice; economics becomes a part, although the hitherto best elaborated part, of a more universal science, praxeology.

The common thought in TQM and praxeology

TQM is a system of putting a goal to provide high quality products and services to customers.The basis of TQM is eight quality management principles. Also, the third edition of ISO series 9000:2000 takes into consideration these eight principles by formulating a systemic quality management strategy (EN ISO 9001:2008). These principles are as follows: 1) customer orientation, 2) leadership, 3) human commitment, 4) process approach, 5) systemic approach to management, 6) constant improvement, 7) the taking of decisions on the basis of facts, 8) mutual beneficial links with suppliers. Each of these principles has been elaborated by modern specialist literature. It is even the case that separate works treat these principles on an individually basis. When reading the works of T. Kotarbiński concerning praxeology one may see references to almost every principle. The train of thought is precise, each word is consciously employed, profound and, in the majority of cases, compliant with current approach to quality management. Let us compare the TQM principles (EN ISO 9001:2008, Gajewski 2007) and concepts of this leading praxeologist, T. Kotarbiński (Kotarbiński 1968).

1. Customer orientation

Tadeusz Kotarbiński (TK): "… and we should always be aware of the person to whom our effort is directed, and we should do everything in our power to ensure that this effort is directed appropriately, that it gives satisfaction to those it is supposed to serve as to us well."

TQM: “Organizations depend on their customers and therefore should understand their current and future needs. In the interest of any organization is to know and understand current and future customer needs and expectations. The organization must meet the needs of customers and try to stay ahead of their expectations”.

2. Leadership

T.K.: “And it is the task of groups leading institutions which allows one to best look into the variety of directives characteristic of the positive corporation. One of the first tasks of this type is undoubtedly the choice of people beneficial to the group and the rejection of those who are inadequate candidates. The functions of managers increasing require a higher level of knowledge, commitment and the setting of positive examples…”

TQM: “It is required that the leader had a vision of the organization, have the skills to influence and inspire the diligent work, encourage competition, was an example - he had an instinct for leadership. The leader should have such personal qualities that will ensure its acceptance in this role and to submit to his authority. Acceptance of words should be spontaneous, without the use of coercion”.

3. The involvement of employees

T.K.: “… the organization as a whole ought to be run in a manner permitting all participants to implement the main objective”.

TQM: “All employees of the organization, from the lowest in the hierarchy to top management, are the essence of the organization, its most important asset. Their total commitment allows us to use their abilities for the good of the organization. The objectives of individual employees and syndromes should be subordinated to the entire organization. People, their knowledge, and involvement are the most important guarantee of achieving the objectives of each organization”.

4. Process approach

T.K.: “…an organization is a set-up mutually binding its parts and relations binding those parts into a whole”. And as follows: “…significant is the definition of integration groups, which cooperate in unison in implementing a given task and cooperate in unison together, thus creating a transparent and effective set-up throughout the organization.” The concepts of so-called positive and negative cooperation and compliant and non-compliant groups are particularly interesting).

TQM: "Scheduled objectives, the desired result is achieved more efficiently when activities and related resources are managed as a process. Process is a set of interrelated and mutually influencing activities that transform inputs (input) to the output (output). The most important task of top management is to identify the key processes that mainly affect the success of the organization".

5. System approach to management

T.K.: "… in the set of constituent parts of an organization one should introduce specific time and space order, appropriately balance the functions of each constituent part, establish amongst them a system of dependency, varied and strict according to need, in other words a sufficiently uniform system."

TQM: "Systemic approach we call identifying, understanding and managing interrelated processes (within the adopted system, e.g. based on ISO series 9000). Quality Management System consists of a series of interrelated processes, such as: product realization, monitoring, measurement. System approach to management, as well as the process approach, helps to increase the effectiveness and efficiency of the organization in achieving its objectives".

6. Continuous improvement

T.K.: "One should improve intellect, it should be inclined in the direction of initiative, in other words it should entail the spontaneous undertaking of tasks without anyone's order and without the pressure of immediate need, the intellect should be ready to take on effort, whilst any attempt at taking the easy way out should be prevented. And may this effort involve long-term concentration, may it be focused and directed towards a given objective".

TQM: "It is recommended that continuous improvement has been a constant goal at every level of the organization. At the highest level and mid-level management should manifest itself by setting more ambitious goals. At the operational level, regular employees, improvement should be manifested by the submission of proposals refinements lazy individual processes (improving quality, shortening the execution of the step-SCI, reduce waste, etc.).

7. Making a decisions based on the facts

T.K.: "Decisions should be taken according to plan, which should above all not be contradictory, but internally compliant and rational. The next trait of a good plan is for it to adequately reflect capacity, for it to make long-term

intentions feasible. A rational plan is the level to which it is adapted in the light of available knowledge. Knowledge should reflect the current situation and forecasts concerning any future spontaneous development in changing reality".

TQM: "Effective decisions can be made only on the basis of the analysis of data and reliable information. The data can come from both internal sources and external egg. For internal data include: the results of monitoring - the measurement of processes and products, financial statements, assessing staff performance indicators achieving your goals. External data are: complaints, the results of marketing research, customer reviews. The special role of the metrological service in May, which should benefit from a well-equipped and reliable instruments. If an organization does not have those are should use accredited laboratories".

8. Mutual beneficial supplied relationships

T.K.: "The functioning of a market economy would not be possible if agreed upon contract were not obey, mediation was not reliable and the basis of most relationships there was no trust. The company is best protects your interests caring for the public good and creating relationships with customers, suppliers, employees, financial institutions and local communities based on relationships of trust and mutual benefit".

TQM: "The organization and its suppliers are interdependent and mutually beneficial relationships enhance the ability of both parties to create value. The effectiveness of cooperation between customer and supplier is dependent on many factors of which the most important are economic and technical ties. Providers should know the needs of their customers and adapt to their expectations. The concern is quality products, timely delivery, payment terms. Over time, the client and the supplier make extensive relationships in which mutual relations are governed by the agreement, and satisfaction with the implementation of the provisions turns into a close relationship partner".

Conclusion

The author of this paper is aware that some of the views put forward might appear problematical. However, the elaborated quality management system presented in ISO series 9000 norms, is a coordinated layout of elements, a collection constituting a kind of entirety of its constituent parts. This is a group of measure methods and an ensemble of organizational principles concerning quality management. Kotarbiński did not occupy himself with quality management but, amongst others, the philosophy of

"good work". However, he was aware of the importance of these matters, when he wrote (Kotarbiński 1957, p. 656): "The use of good work principles is manifold and depends on the situation. It would be good, however, to impress on oneself the entire group of such principles, to place them in order in one's mind and to become aware of such juxtaposition and sequence…". The juxtaposition and placing in order of this information, enriched by typical quality management elements, is also evident in ISO 9000 norms as well as in many business line norms concerning quality management (the car industry, aviation, pharmaceuticals, food industry etc). If, however, referring to TQM we rightly mention the co-founders of the concept – A.V. Feigenbaum, E.W. Deming, J.M. Juran – we must take into consideration the fact that all three were in essence statisticians and started elaborating quality control statistical methods during the inter-war period of the 20th century. It was only when quality programmes were implemented in the weapons industry by the USA during World War II, and particularly during the post-war period when Japan was rebuilding itself, that the first efforts were made at elaborating systemic quality control. T. Kotarbiński's praxeological thinking on "good work" outpaces by at least 50 years the assumptions of TQM. Can one argue that the convergence of many concepts expressed in praxeology and TQM is fortuitous?

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BENEFITS OF MANAGEMENT SYSTEMS INTEGRATION

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Introduction

Implementation of an integrated management system is determined by several biline internal and external factors which affecting on the operation of the organization. It is an opportunity to demonstrate its commitment to sustainable development in relation to the customer, as well as in relation to the environment , to protection health and safety , food safety , information security etc. Integration of these systems is possible on the basis of structural similarity standards, as well as their historical advancement. The basic prerequisite for an effective integrated management system is to fulfil the requirements of all standards into a unified whole and simple, effective and transparent process creation for employees, handling the compact documentation and quality manual. Integration of management systems means linking of systems which are orientated on the customer, the public, employees or owners into a single unit of organization. Management System integration is a convenient way of management system which takes into account not only the quality of processes and products, but also to the environment, safety and health at work and to other management systems.

The australian authors (Zutshi – Sohal, 2005) states that implementation and certification of quality management systems (ISO 9001), environmental management (ISO 14001) and the management of health and safety at work (OHSAS 18001) are important activities in many organizations and they are widespread phenomenon in the world. These normative systems represent framework base for build complex system in company and they are perceived as appliance for more effective management processes. ISO 9001 is customer-oriented and ISO 14001 and OHSAS 18001 are designed for the whole society which does not alter the fact that the PDCA model represents the basic platform of the three standards, thereby providing compatibility between their requirements at all key management systems. Integrated approach assumes

gradual harmonization of documents which should multiple benefits to organization, for example common policies, gradually streamlined structure necessary steps in the organization, simplification organizational system security, reduce costs.

System approach ensures orientation in legislative requirements and their fulfillment, effective interconnection correlative links, improving organizational structure. The benefit of implementing integrated system is clearer and simplier documentation management, elimination of duplication, reducing the costs of human resources which ultimately leads to ensure maximum satisfaction of customers and all stakeholders.

Material and methods

Beside elaborating issues benefits of integration of management systems are based on theoretical knowledge and other secondary data in the examination of the current state of issues solved at home and abroad. The next step was the comparison of particular theoretical approaches and evaluation of the overall issue of integration of chosen management systems.

In thesis are used theoretical methods, especially general or logical methods. They include methods of analysis and synthesis. The analysis method is implemented at breakdown of examined effects to individual elements. We used analysis method in analyzing integrated management system in organizations. We analyzed what are the benefits of this system, what are the benefits and risks of integration prevents the system and what conditions must be fulfilled organization if you want to implement management system integration.

Integrated Management Systems are process-oriented and there are relationships between the processes and interactions that we followed through synthesis. The synthesis procedure is contrary to the analysis. It represents the unification of the portion allocated through analysis into a single unit. We can identify by using this method the benefits and risks encountered in the implementation of integrated management systems and it is possible by using this method understand the internal structure of the management systems, examined processes and relations between them. On the basis of analyzing the activities, practices and knowledge learned from the management systems and their integration we constricted accord it with synthesis. In appraising the benefits of integration management systems we used comparative method which consists in comparing objects or elements to determine their identical or different features of each management system within an integrated management system. We were processed and evaluated results by tables.

Results and discussion

Integration of management systems

Management systems are integrated also along of economic reasons. A single system is created for all management systems and also certain requirements are realized joinly which from implementation of these systems arise as a common policy, objectives, management, manual, other related documentation, specification of operational activities, monitoring and measurement, metrology, corrective and preventive actions, internal audits, management review.

Management system integration is formed by developing base system in two directions. In one direction the processes are evolving and their organizational arrangements are optimalizing. Second direction concerning the behavior of people and their understanding of the system. A decision to implement more than one system depends on the type and complexity of the organization activities. Without a holistic approach to management, good systems can also lead to bureaucracy and duplication and can become dysfunctional.

Method and methodology of integration is determined by the organization on the basis of reports on the state and level of the management aspects. The integration of these management systems is based on conjuction in implementation of standards, which are suitable for the organization as a quality management system, environmental management system, management system of health and safety at work, management system and food safety and other according to the nature of the organization and the industry in which it operates.

ISO 9001:2008 Quality management systems. Requirements. require to determine criteria and methods needed to ensure the effective implementation and management processes of the organization, ie. those, which are leading to levels of behavior which meet the specified requirements and are leading to increased customer satisfaction. It is necessary to establish requirements applicable to the products (results of organizational processes) and throughout the whole product realization maintaining control the relevant quality characteristics of the product..

ISO 14000:2004 Environmental management systems. Requirements with guidance for use requires the identification of environmental aspects and defining those aspects which are important. It requires the identification of legal requirements and their relationship to environmental aspects, and also the establishment of goals and objectives of environmental performance levels.

OHSAS 18001:2009 Occupational health and safety management systems. Requirements requires hazard identification, risk evaluation and implementation of appropriate control measures. Evaluation should bring risks ranking. Control of risks should at least lead to a level of behavior which is required by the law. In addition, an organization should establish objectives and management programs to improve health outcomes and safety at work and, where possible, should eliminate the risks. Working procedures and activities related to the identified risks are subject to operational management.

Management of all three management systems is always consist of a sequence of cyclic and repetitive steps: declaration of commitment, policy organization, planning, implementation and corrective action control.

Benefits and risks of integration the selected management systems

Before implementation the integrated management system is important, in general, to determine the effectiveness and efficiency of the organization management and to condemn various management systems to be integrated. It is also important to determine in what extent the integration should be implemented, to condemn legislative requirements and determine the necessary competence and long-term objectives of the project integration. The development in the field of quality, environment, safety and health at work is drifting towards the creation of the integrated management systems, which is clearly documented by their benefits (Nenadál, 2008):

- financial savings,
- effective coordination of the oraganization activities,
- creating the appropriate environment and tools for the effective fulfillment of the strategy,
- specification of responsibilities and authorities,
- slimmer, more transparent a accessible system in the documentation,
- improvement of production processes,
- reducing energy and material consumption,
- reducing the number of accidents and their consequences,
- detecting errors in the various activities and their timely and effective correction,
- effective waste management,
- concrete and transparent procedures for the protection of all environmental and working environment components,
- prevention and eventual disposal of possible accidents,
- guarantee compliance with all legislation limits.

W. Pardy lists the benefits that can be utilized through the implementation of management systems. These benefits include (Pardy - Andrews, 2010):

- alignment of business objectives,
- the objectives of safety and health at work and maximized key performance indicators,
- establishing common objectives, processes and procedures,
- creating a synergy, reducing surpluses and increasing effectiveness.

Benefits that an organization can gain by implementing an integrated management system is an important criteria for it's sustainable implementation. Mutual integration of the different systems in the organization manifests a synergistic effect in terms of compatibility management systems and management efficiency. System approach ensures orientation in legislative requirements and their fulfillment, enabling to avoid various risks in the activities of the organization. Some authors indicate that through the integration of management systems, fewer problems are to be expected caused by the lack of conformity or understanding, the activities that do not add value can be reduced, the better usage of resources and decrease of complaints from customers can be reached (Farahani – Chitzas, 2010).

The authors (Majstorović – Marinković, 2011) reported that the integration of management systems should provide the following benefits to the organization:

- costs reduction (internal audit, documentation, trainings),
- holistic approach to risk management,
- reduction of the duplication processes / bureaucracy,
- avoid conflicts between different systems,
- improve the internal and external communication,
- focus on process management,
- improve motivation and employee relations,
- optimization of internal and external audits.

All these benefits should motivate not only large companies, but especially medium and small enterprises, respectively. micro enterprises that are interested in implementing some management systems to reflect on their mutual integration. In the integration of management systems, as in any other activity, there may be also some barriers. The Australian scientists Zutshi, A. – Sohal, A. S. conducted an empirical survey of Australian organizations and the results of the survey identified barriers, for example: attitude of the people, in terms of resistance to change the current situation, the lack of strategic

planning, expertise and qualified personnel, the use of external consultants, regularly changing regulations, ordinances, guidelines and principles.

The examination of the integration processes in terms of Italian businesses detected the biggest barriers, respectively difficulties in integrating risk management systems: there is not allocated the correct level of importance for each management system, difficulties in organizing an integrated management system, a problem with employees who can confuse standards, lack of integrability of standards and lack of support from certification organizations (Salomone, 2008). It follows that the integration of management systems is not a simple process. This requires achieving the strategic synergies, strategic planning, organization culture based on continuous improvement.

Management systems integration benefits research

We investigated Slovak organizations approaches management systems integration. The survey also aims to identify benefits, barriers and risks that may occur in the integration of management systems. The research sample consists of companies from different industries operating in the Slovak Republic and consists of 215 business entities. However, not all the respondents answered us, or completed questionnaires correctly. Thus not all questionnaires were included in the research sample. Finally, 86 % questionnaires were returned.

One of the research issues related to the integration of management systems examined by foreign authors is the question is why management systems should be integrated, or what are the reasons for the mutual systems integration.

Based on theoretical knowledge, we identified twelve reasons for the mutual integration, referred to Table 1. Reasons are also listed with absolute relative frequency responses of organizations that have implemented an integrated management system. Subjects could select multiple answers.

The survey shows that the most important reason for the integration is elimination of duplicates. This reason was stated by 83 % of subjects. This is related to a financial costs reduction, which was stated as a reason for the integration of systems by 87 subjects (78 %). Other important reasons include building a single efficient process control system and increase of competitiveness. These reasons identified 76 % of business entities.

Pressure on continuous improvement is also a frequent stated reason of integration (64 %). Only 26 % of subjects identified requirements from customers as a reason for the integration. It can be assumed that if the organization decides to integrate the management systems, it is mainly due to the effective implementation of its processes and activities.

Table 1. Reasons for Managements Systems Integration

Reasons for management systems integration (n=112)	Absolute Frequency	Relative Frequency
Development of a single, efficient process control system	85	**75.89%**
Common requirements of individual management systems	54	48.21%
Elimination of duplicates	93	**83.03%**
Reduction of financial costs	87	**77.68%**
Synergistic effect	47	41.96%
Identifying opposed objectives, responsibilities and relationships	51	45.53%
Harmonization of directive regulations and relations	43	38.39%
Pressure on continuous improvement	72	64.28%
Increased competitiveness	85	**75.89%**
Requirement for competition, public procurement or state contract	43	38.39%
Demand from the subscribers	47	41.96%
Demand from the customers	29	25.89%
Other reason	0	0.00%

Source: own processing

The research showed that increasing competitiveness can be ranked among the most important reasons for the management systems integration, which was confirmed by 75.89 % of organizations that participated in the survey. It can be stated that the implementation of an integrated management system leads to the growth of companies' competitiveness, which should be reflected in their financial results. Integrated Management System facilitates entry into foreign markets and allows companies to get new customers.

We asked respondents about management systems integration benefits for organizations. Again, we based on the theory knowledge and from their analysis, we identified 14 benefits of management systems integration. Respondents could evaluate these benefits on a scale from 1 to 5, where 1 means the minimum contribution and 5 means maximum systems integration benefit for the organization. Table 2 below shows the evaluation of benefits. To this question responded only those organizations that have implemented an integrated management system, which means 112 subjects.

Cost reduction as the maximum benefit was rated by 77 subjects (69%). Similarly, among the highest rated benefits we may include administrative burden reduction stated by 73 subjects (65%) and also documentation of integrated management systems reduction. This benefit as the maximum was rated by 70 organizations (62.5%).

Table 2. Management Systems Integration Benefits

Benefits of Management Systems Integration (n=112)	**1**	**2**	**3**	**4**	**5**
Resource optimization - finance, Human Resources	0 0.00 %	0 0.00 %	**48** **42.86%**	40 35.71%	24 21.43%
Better definition and determination of responsibilities and competences	0 0.00 %	0 0.00 %	16 14.28%	38 33.93%	**58** **51.79%**
Effectiveness and performance increase	0 0.00 %	0 0.00 %	17 15.18%	43 38.39%	**52** **46.43%**
Duplicate activities elimination	0 0.00 %	0 0.00 %	17 15.18%	36 32.14%	**59** **52.68%**
Costs decrease	0 0.00 %	0 0.00 %	9 8.04%	26 23.21%	**77** **68.75%**
Administrative demands decrease	0 0.00 %	0 0.00 %	13 11.61%	26 23.21%	**73** **65.18%**
Documentation reduction	0 0.00 %	0 0.00 %	6 5.36%	36 32.14%	**70** **62.50%**
Consolidation of internal audits	0 0.00 %	16 14.29%	21 18.75%	**39** **34.82%**	36 32.14%
Consolidation of external audits	0 0.00 %	0 0.00 %	4 3.57%	**79** **70.54%**	29 25.89%
Unification of trainings	0 0.00 %	0 0.00 %	4 3.57%	50 44.64%	**58** **51.79%**
Elimination of disputes in various organization strategies	0 0.00 %	13 11.61%	24 21.43%	29 25.89%	**46** **41.07%**
Employee motivation enhancement	7 6.25%	35 31.25%	46 41.07%	**24** **21.43%**	0 0.00 %
Corporate Culture enhancement	0 0.00 %	17 15.18%	59 52.68%	**36** **32.14%**	0 0.00 %
Corporate Image enhancement	23 20.54%	40 35.71%	42 37.50%	**7** **6.25%**	0 0.00 %

Source: own processing

Based on the research results, to the significant benefits of management systems integration we can include also the integrated management systems external audits unification, which was rated by 79 organizations (70.5%) as a significant contribution. An important benefit to the queried entities is also training unification, rated by 50 organizations (45%) and also increase in the efficiency and performance, rated by 43 companies (38%). Up to 59 organizations (53%) rated the improvement of corporate culture as contribution that was due to the management systems integration resulted as

average. Optimization of financial and human resources is another benefit that was rated as average by 48 organizations (43%). Similarly was rated also employee motivation improvement by 46 subjects (41%) as the average contribution of the management systems integration.

Table 3. Ranking of Management Systems Integration Benefits

Ranking	Management Systems Integration Benefits	Average value
1	Costs decrease	4.61
2	Documentation reduction	4.57
3	Unification of trainings	4.48
4	Duplicate activities elimination	4.38
	Better definition and determination of responsibilities and competences	
5	Administrative demands decrease	4.33
6	Effectiveness and performance increase	4.31
7	Consolidation of external audits	4.22
8	Elimination of disputes in various organization strategies	3.96
9	Consolidation of internal audits	3.85
10	Resource optimization (finance, Human Resources)	3.79
11	Corporate Culture enhancement	2.89
12	Employee motivation enhancement	2.78
13	Corporate Image enhancement	2.29

Source: own processing

Organization image improvement is perceived as benefit under the average by 40 respondents (36 %). Also improving employee motivation was resulted as less relevant contribution rated by 35 organizations (31 %). Among the benefits that were resulted in minimum effect we can include improving the image of the organization, which was rated by 23 subjects (20.54%). We examined whether there are differences in the benefits of integration of management systems among small, medium and large enterprises. Beside benefits also barriers of management systems integration were assessed. On the basis of theoretical knowledge, we determined seven barriers, or problems that could occur in management systems integration. Respondents could rate these barriers on a scale from 1 to 5, where 1 means the minimum obstacle and 5 means maximum obstacle to the systems integrations for the organization. Table 3 clearly shows all assessments.

Table 4. Barriers of Management Systems Integration

Barriers of Management Systems Integration (n=112)	**1**	**2**	**3**	**4**	**5**
Difficulties with organization of management systems integration	0 0.00%	4 3.57%	20 17.86%	41 36.61%	**47** **41.96%**
Incompetency of responsible person for management systems integration	7 6.25%	26 23.21%	**48** **42.86%**	21 18.75%	10 8.93%
Missing guidelines for management systems integration	0 0.00%	5 4.46%	35 31.25%	**42** **37.50%**	30 26.79%
Insufficient cooperation among departments	0 0.00%	0 0.00%	6 5.36%	41 36.61%	**65** **58.03%**
Insufficient employee motivation	0 0.00%	0 0.00%	12 10.71%	31 27.68%	**69** **61.61%**
Lack of time for integration	0 0.00%	8 7.14%	**38** **33.93%**	36 32.14%	30 26.79%
Absence of Human Resources	0 0.00%	0 0.00%	10 8.93%	27 24.11%	**75** **66.96%**

Source: own processing

Based on the survey results among the maximum barriers to the management systems integration we can be include a lack of human resources, stated by 75 organizations (67%), lack of employees motivation, rated by 65 respondents (58%) and also the lack of cooperation between different departments in the company what was rated by 65 subjects (58%).

As a relatively important obstacle identified by 42 respondents (37.5%) is lack of guidance for the management systems integration. Similarly rated as a as a significant barrier by 41 respondents (36.61%) is the lack of cooperation between departments and the same number of respondents (36.61%) rated the problem systems integration organization.

Incompetent representative responsible for the integrated management system is an obstacle identified as a relatively average by 48 respondents (43 %). Another relatively average barrier rated by 38 subjects (34%) is lack of time to integrate. As a relatively less significant obstacles mentioned by 26 organizations (23%) is incompetence of person responsible for the integrated management system and 8 organizations (7%) mentioned lack of time to integrate.

Seven subjects (6%) perceive incompetence of representative responsible for the integrated system as the minimum obstacle to the management systems integration in the enterprise. This can be affected by organizations using

external advisors and consultants services in order to integrate their management systems In order to provide a more comprehensive view on the issue of management systems integration we have identified certain risks that may arise during the integration.

The survey results indicate that most organizations (75.89%) participated in the survey consider extra costs for additional systems implementation of as risk in management systems integration. Based on the survey results, we can confirm the hypothesis. Organizations that choose to integrate management systems should be responsible and trustworthy in all business areas. Systems integration, implementation of the corporate social responsibility concept and sustainable development develops organization towards better performance not only for its customers but for all stakeholders.

Conclusions

Based on the survey results among the maximum barriers to the management systems integration we can be include a lack of human resources, stated by 75 organizations (67%), lack of employees motivation, rated by 65 respondents (58%) and also the lack of cooperation between different departments in the company what was rated by 65 subjects (58%).

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MEASURING BUSINESS EXCELLENCE - QUALITY ORIENTATION MATURITY

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Introduction

The Quality Orientation philosophy was developed when organizations began to seek competitive advantages through the creation of customer satisfaction with quality. This philosophy, which is a firm-wide commitment to competing on the basis of quality, can be defined as the Quality Orientation (QO). In other words, the Quality Orientation presents a philosophical commitment to developing and maintaining a sustainable quality-based competitive advantage leading to increased business performance (Mehra, Joyal, Rhee 2011; Lisiecka 2010). The Quality Orientation has its foundation in the principles of Total Quality Management (Mehra, Joyal, Rhee 2011). TQM is a management philosophy. The aim of this management philosophy is to change corporate cultures from a passive and defensive culture to a pro-active and open culture where the basic TQM principles increased customer satisfaction, continuous improvement and everybody's participation are applied everywhere in the organization (Dahlgaard, Dahlgaard-Park 2006). Therefore TQM is a company culture characterized by increased customer satisfaction through continuous improvements, in which all employees actively participate (Dahlgaard, Dahlgaard-Park 2006). The goals of TQM are to satisfy customers, prevent poor quality rather than correcting problems, develop an attitude of continuous improvement, understand the value of measuring performance to identify opportunities and maintain improvements, and to eliminate chronic sources of inefficiencies and costs. These goals could be achieved if there is a total commitment by entire organization (including top-management and employees) as well as principles of TQM are fully understood by them (Talib, Rahman, Qureshi 2011). This philosophy has no boundaries and is concerned with managing quality. TQM stresses a systematic, consistent and organization-wide perspective, involving everyone and everything. It focuses primarily on total satisfaction for both internal and external customers within a management environment that seeks continuous

improvement of all systems and processes. The philosophy emphasizes the use of all people, usually in multi-functional teams, to bring about improvement from within the organization (Pun, Nurse 2010).

Quality management as a philosophy is characterized by principles, practices and techniques (Dean, Bowen 1994). Total quality management incorporates quality management principles (Pun, Nurse 2010). The quality principles are a set of underlying assumptions of how to view the organization and its relation to customers, competitors and suppliers (Dean, Bowen 1994; Johansson, Witell, Rönnbäck 2013). The Quality Management Principles (QMPs) are a comprehensive and fundamental set of rules or beliefs for leading and operating an organization aimed at continually improving performance over the long-term by focusing on customers while addressing the needs of stakeholders (Pun, Nurse 2010). The practices are viewed as the activities performed to display and embody the principles, such as collecting customer information and conducting customer surveys. The techniques are seen as the guidelines and infrastructure for performing certain practices, such as voice of the customer tables and quality function deployment (Dean, Bowen 1994). Therefore the principles of Total Quality Management are the main source of Quality Orientation.

The aim of the paper is to identify the Quality Orientation (QO) maturity level in organizations coming from Poland and abroad. The level of implementation of Quality Orientation is defined as the level of the implementation of the eight Quality Management Principles (QMP) in organizations.

The paper is divided into eight parts. Introduction is the first part of the paper. The next part includes short literature review concerning the measurement of Quality Orientation maturity viewed through an implementation of Quality Management Principles. The third part presents research model and hypotheses. Research method and data collection are presented as part fourth. The fifth part is about sample characteristics. Survey results are included into the sixth part of the paper. The seventh part concerns conclusions and bibliography is a content of the last part.

Quality Orientation maturity – measurement

The Quality Management Principles (QMPs) as a set of rules for leading and operating an organization should be discovered and defined. The question is: how many principles are there in quality management? The number of principles differs between authors. Usually the range is from 3 to 13 principles (Witell, Antoni, Dahlgaard 2005). Very early approach in this issue present Dean and Bowen (Dean, Bowen 1994) and according to them quality is based on three principles: (1) Customer focus; (2) Continuous improvement; (3)

Teamwork. According to another approach there are five principles of quality management (Witell, Antoni, Dahlgaard 2005): (1) Management commitment; (2) Focus on the customer and the employee; (3) Focus on facts; (4) Continuous improvement; (5) Everyone's participation. But there are also quality management principles according to quality awards or excellence models. The most famous principles are included in ISO 9000 standard (ISO 2005). The ISO standards offer a management system based on eight principles draw up by International Organization for Standardization (ISO 2005; Rogala 2010). The eight QMPs include: (1) customer focus; (2) leadership; (3) involvement of people; (4) process approach; (5) system approach to management; (6) continual improvement; (7) factual approach to decision making; and (8) mutually beneficial supplier relationships. The characteristics all above mentioned principles are presented in table 1.

Table 1. Quality Management Principles - characteristics

1. CUSTOMER FOCUS	
1.	The Organization identifies the groups of interested parties.
2.	The Organization tries to fully identify customers' requirements and expectations, and to verify and update them.
3.	The organization determines the influence (both negative and positive) of the individual interested parties on its activity.
4.	Customers' complaints are investigated effectively and in the right time.
5.	Customer satisfaction is measured in the Organization.
6.	Information about customer satisfaction is made public inside the Organization and around it.
2. LEADERSHIP	
1.	The strategy and/or policy are determined in the organization.
2.	Top Management establishes and communicates ambitious, real and comprehensible aims for worker teams and/or individual employees.
3.	The hazard, which can influence the achievement aims is analyzed in the Organization.
4.	The strategy and policy are regularly updated by using data from inside and outside.
5.	The Organization provides its employees with necessary sources, trainings and freedom of action within the scope of their tasks, qualifications and responsibility.
6.	Management of the Organization appreciates employees' work, initiative and creativity.
7.	The right communication between all levels of the Organization is functioning properly.
3. INVOLVEMENT OF PEOPLE	
1.	Qualifications of the Organization employees are fully used by the organization.
2.	The Organization employees are creative and innovative.
3.	The Organization employees are fully aware of their impact and importance on achieving the organization's aims.
4.	The Organization employees try to find possibilities of raising their qualifications.
5.	The Organization employees are easily sharing the knowledge and experience. They willingly cooperate with other employees and interested parties.

6.	Employees are willingly engaging in the organizational continual improvement processes.
	4. PROCESS APPROACH
1.	Basic/main processes in the Organization are identified.
2.	Actions in processes, sequences of those actions, inputs and outputs of the process, and sources necessary for their realization, are identified in the Organization.
3.	Employees who are responsible for the processes (processes leaders) are identified in the Organization.
4.	Measures of the processes are identified in the Organization.
5.	Measurements of the processes are regularly monitored and their results are analyzed.
6.	Essential process indicators, which serve to make strategic decisions, there are determined.
	5. SYSTEM APPROACH TO MANAGEMENT
1.	Relations between processes in the Organization are identified. Process map is worked out.
2.	Employees are aware of the fact, that the Organization is a system of cause and effect connected elements.
3.	System approach is used to increase Organization's results.
4.	The systematic learning is present in the Organization.
	6. CONTINUAL IMPROVEMENT
1.	Top management in the Organization encourages and supports its employees in continual improvement in order to achieve expected aims.
2.	The organization identifies areas for continual improvement, innovations and systematic learning.
3.	Learning is the key issue in the Organization. Top management supports initiatives connected with organizational learning.
4.	Self-evaluation is carried out in the Organization.
5.	At the improvement process the Organization uses different methods, tools and techniques, such as: Six Sigma, Lean Management, 8D, 5S, benchmarking.
	7. FACTUAL APPROACH TO DECISION MAKING
1.	Decisions made in the organization are based on an analysis of facts, supplemented by the intuition and experience.
2.	Top management in Organization provides appropriate access to data, information and tools which allow making an affective analysis. Are there determined access methods and people who are authorized to access the data?
3.	There are determined access methods and people who are authorized to access the data.
4.	Data and information collected in the Organization are useful (are fully used) to making decisions.
	8. MUTUALLY BENEFICIAL SUPPLIER RELATIONSHIPS
1.	Criteria of suppliers qualifications are worked out and updated in the Organization.
2.	Qualifications criteria include multifaceted range, for example: price, deadline of deliveries, service method, after sale service with the trainings.
3.	Top management in the Organization cares for the development of relations with key suppliers and partners (shares the experiences with partners).
4.	Partners and suppliers of the Organization are involved in and have influence on the organization's success.

Source: own work

A set of statements, that describe the quality management principles developed and contained in Table 1, were used in the empirical part of the paper to measure and identify the Quality Orientation maturity level in organizations. The assumptions used to develop this table are included in ISO standards. Quality Management Principles define the relation of the company and its employees to quality management and allow for using a synergy effect in quality management system (Hamrol, Mantura 2004). Quality Management Principles can be used by the organization's management to improve organizational operating. They aim is to facilitate achievement of the quality objectives and the management objectives of the organization. The Quality Management Principles provide a clear relationship of a company's quality system to its management system in a business framework (Pun, Nurse 2010).

Research model and hypotheses

In the literature there is an interest in empirical evidence concerning the maturity level of Quality Orientation (QO) in organizations defined as the level of implementation of eight Quality Management Principles (QMPs). Therefore QO maturity level becomes a key issue in conducted survey. The key research questions are: What is the Quality Orientation maturity level in organizations coming from Poland? Does the level of Quality Orientation maturity in organizations in Poland differ from the level of QO maturity in organizations from abroad?

In this study the following hypotheses were developed:

- ✓ H1: The level of the QO maturity in organizations coming from Poland is on the average level.
- ✓ H2: The level of QO maturity in organizations in Poland is higher than organizations in Serbia and in Ukraine.

Because the second hypothesis is broad therefore it had to be specifying more precisely. For that reason following detailed hypotheses were formulated to the second hypothesis:

- ✓ H2.1: The level of QO maturity in organizations in Poland is higher than organizations in Serbia.
- ✓ H2.2: The level of QO maturity in organizations in Poland is higher than organizations in Ukraine.

For clarity and transparency of the paper there was created a graphical research model (Fig. 1).

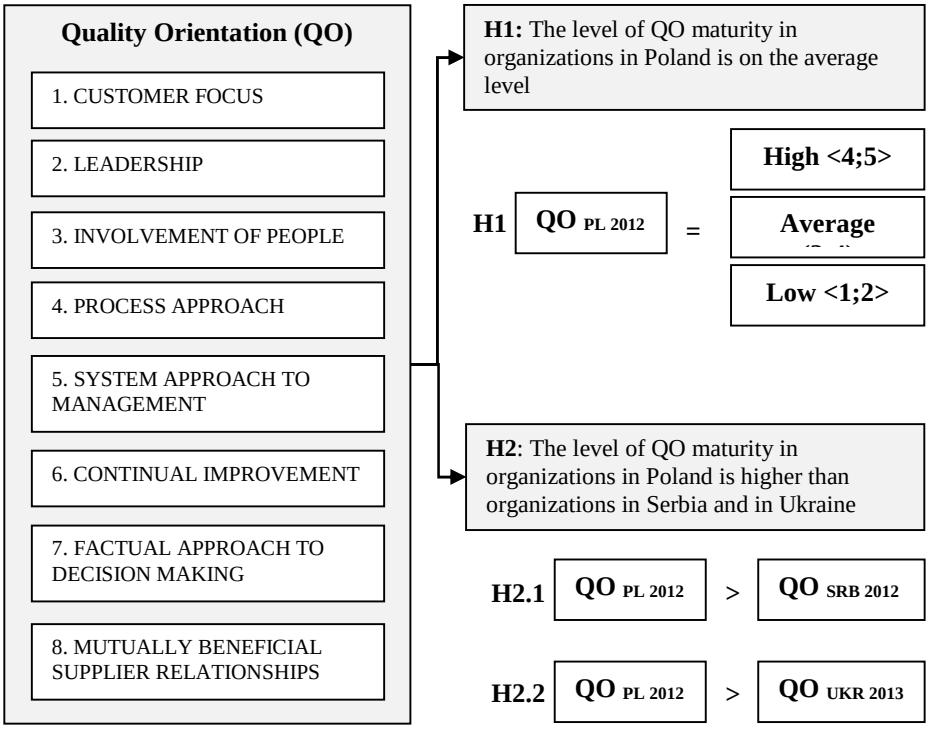


Figure 1. Research model

Source: own work

Research method and data collection

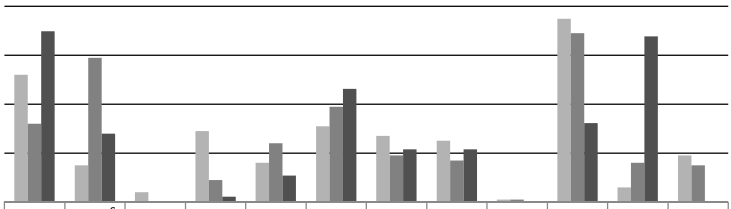
In the application part of our research we used a specially designed questionnaire. The first main part of the questionnaire concerns the level of Quality Orientation maturity and contains of 42 statements / questions. Respondents' task was to evaluate all statements listed in the questionnaire. The evaluation is a subjective assessment of respondents. In evaluation we used a five-point Likert scale, whereby 1 - means "no, I do not agree, it is not true" and 5 – means "yes, I agree, statement in 100% is true". The collected data were analyzed using Excel software.

Developed questionnaire was sent electronically to the organizations in Poland Serbia and Ukraine. The aim of such structured surveyed sample was to allow a comparison in international level. The questionnaire received approximately 680 organizations operating in Poland, approximately 100 organizations in Serbia and 342 organizations in Ukraine. Returning was various in different countries. In Poland we received 86 completed fulfilled questionnaires, representing approximately 13% of the surveyed

organizations in Poland. From organizations in Serbia we received 80 questionnaires, representing 80% of sample in this country. And from organizations from Ukraine we received 93 questionnaires, representing 27% of the surveyed sample. Such returning level achieved in Serbia results from selected target group. Below are presented the results of conducting analysis on the basis of gathered material.

Sample characteristics

The overall analysis of all main sample characteristics is presented on the Fig. 2. The presented results indicate that among the organizations that responded to the survey dominate service organizations. Such situation appears in two cases: in organizations surveyed in Poland and in Ukraine. Totally different situation is in case of Serbian organization, where respondents represent mainly the manufacturing organizations. In Poland service organizations represent 52% of respondents and in Ukraine they represent as many as 70% of respondents. For comparison, among the surveyed organizations in Serbia dominate manufacturer organizations, which represent nearly 60% of all respondents. On second place are service organizations - 32% of surveyed organizations. Among the respondents are also non-profit organizations and local governments unit.



	service	manufac-turing	mixed	other	1-9	10-49	50-249	more than 250	no data	yes	no	no data
PL 2012 N=86	52%	15%	4%	29%	16%	31%	27%	25%	1%	75%	6%	19%
SRB 2012 N=80	32%	59%	0%	9%	24%	39%	19%	17%	1%	69%	16%	15%
UKR 2013 N=93	70%	28%	0%	2%	11%	46%	22%	22%	0%	32%	68%	0%

Figure 2. Sample characteristics

Source: own work

The results showed also that the study consist of companies of all sizes. But the most popular surveyed organizations are: the small size organizations. Among the organizations surveyed in Poland are three main groups. The first group consist of companies employing up to 50 people (31%), the second

employing up to 250 people (27%), and the third more than 250 persons (25%). Very similar situation is with surveyed organizations from Ukraine where small organizations amount to 46%, medium and big size organizations – 22% each and micro organizations – 11%. Also among the organizations surveyed in Serbia strongly dominate organizations employing up to 50 people - nearly 40% of all surveyed organizations. However on the second place are micro organizations that employ only up to 10 people - 24% of all surveyed organizations in Serbia. On the third place are organizations employing up to 250 people - 19%, and next are large organizations, employing more than 250 people - 17%.

The analysis of the data shows also that 75% of surveyed respondents in Poland and nearly 70 % of surveyed respondents in Serbia have an implemented and certified quality management system according to ISO 9001 standard. But there is a difference between Poland and Serbia on the one hand and Ukraine on the second hand. In Ukraine only 32% of surveyed respondents have the ISO certificate. It means that most of surveyed organizations is not certified according to ISO 9001 standard.

Survey results

In the study the 5-point Likert scale was used as a basis for the evaluation of the level of QO maturity. Therefore there were needed to make some previous assumptions. For that reason the study include following assumptions about the QO maturity:

– average value equals between 1 and 2 points means low QO maturity level <1,2>;
– average value equals between 2 and 4 points means average QO maturity level (2,4);
– average value equals between 4 and 5 points means high QO maturity level <4,5>.

Survey results indicate that the Quality Orientation maturity level in organizations coming from Poland is equal to 3,79 points. It means that QO maturity is on the average level in Poland. For that reason there is no reason to reject the first hypothesis. The detailed results show that there is the diversification of maturity results among individual quality management principles (see Fig. 3).

In Poland especially the higher scores receive two principles: mutually beneficial supplier relationships (4,0) and customer focus (4,0). In contrast continuous improvement receive the lowest average score equal to only 3,33 points.

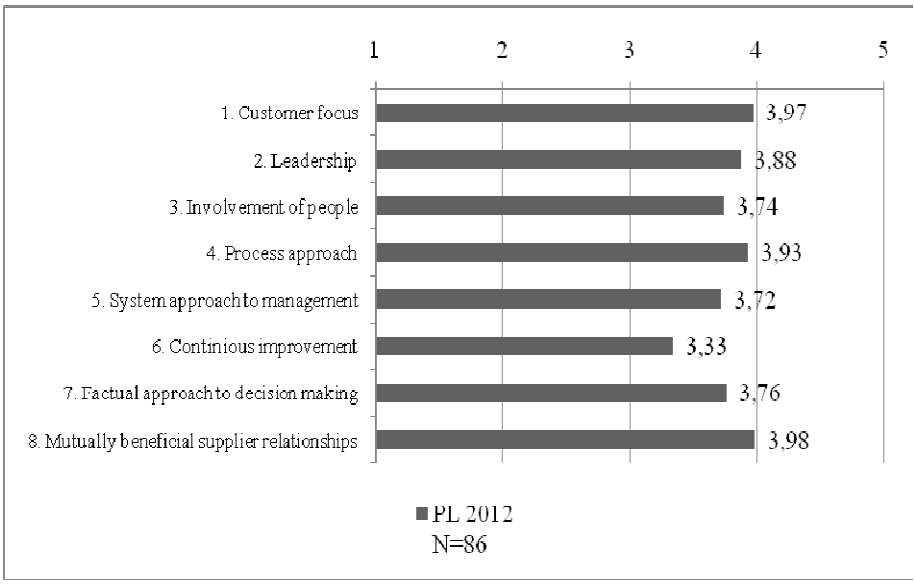


Figure 3. QO maturity in Poland – detailed data

Source: own work

According to the survey results concerning organizations coming from Serbia the overall average score is worse than in Poland. But although this situation was arising during the conducted analyses the detailed scores indicate that the structure of the results is slightly similar (see Fig. 4).

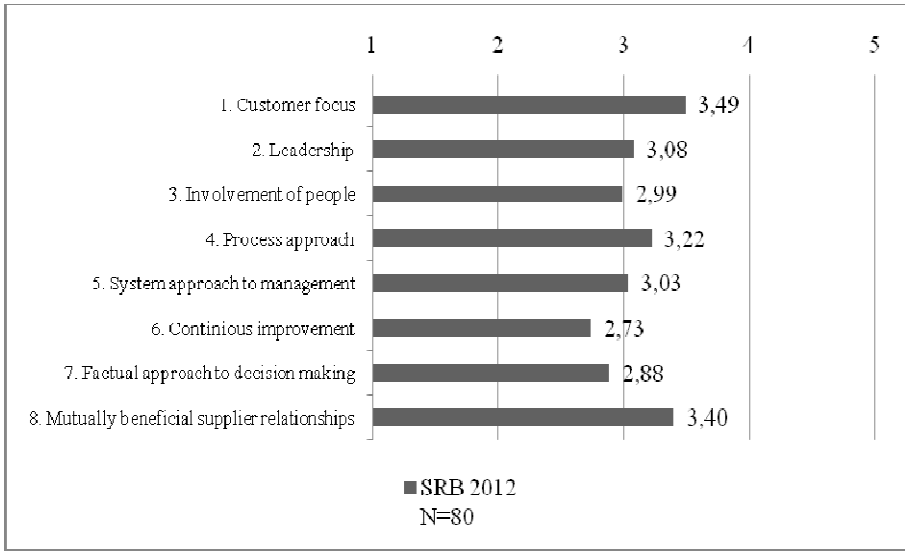


Figure 4. QO maturity in Serbia – detailed data

Source: own work

It means that also in case of this country the higher scores receive two principles: customer focus (3,49) and mutually beneficial supplier relationships (3,4). And there is one principle with the lowest average score equal to 2,73 points – continuous improvement.

Different results have detailed data from organizations surveyed in Ukraine (see Fig. 5).

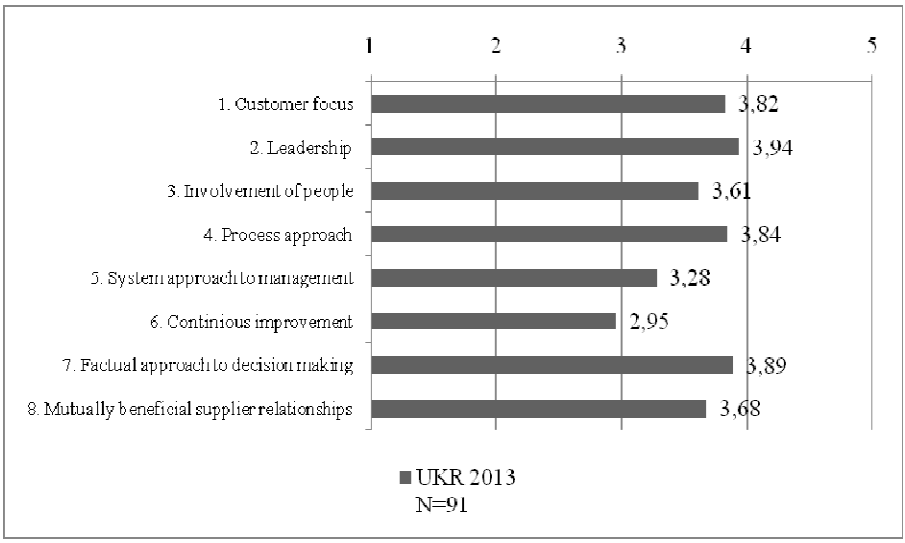


Figure 5. QO maturity in Ukraine – detailed data

Source: own work

The highest scores have such quality management principles as: leadership (3,94), factual approach to decision making (3,89) and process approach (3,84). But the lowest score is still in case of continuous improvement principal (2,95).

The comparison of detailed results received from all countries is demonstrated on the Fig. 6. The analysis confirmed that the lowest results in maturity level achieved continuous improvement regardless of the country represented by the surveyed organizations (Serbia – 2,73; Ukraine – 2,95, Poland – 3,33).

At the same time the highest values in maturity level achieved such principles as: customer focus (Poland – 3,97; Ukraine – 3,82; Serbia – 3,49); mutually beneficial supplier relationships (Poland – 3,98; Ukraine – 3,68; Serbia – 3,40); process approach (Poland – 3,93; Ukraine – 3,84; Serbia – 3,22) and leadership (Poland – 3,88; Ukraine – 3,94; Serbia – 3,08).

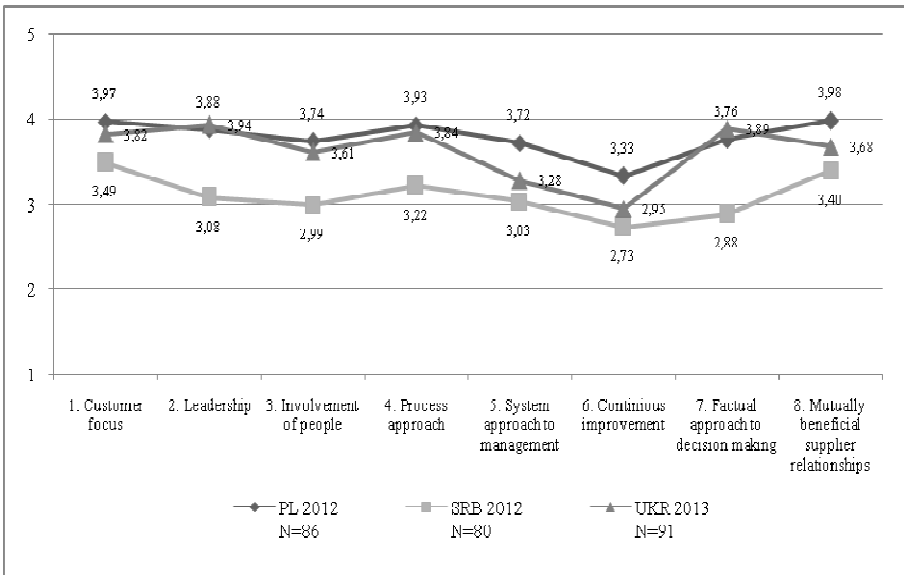


Figure 6. Quality Orientation maturity – detailed data

Source: own work

After the analysis and the presentation of detailed data concerning the level of QO maturity there is a question about overall average score in each surveyed country. The results of international comparison were presented on the Fig. 7.

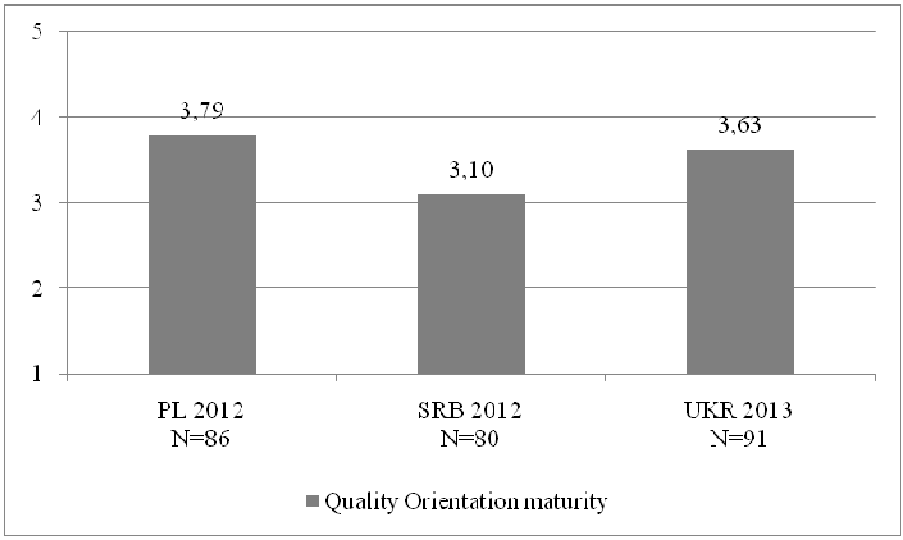


Figure 7. Quality Orientation maturity

Source: own work

The measurement of Quality Orientation maturity level confirmed that the level of QM maturity is on the average level regardless of the country represented by the surveyed organizations. In all three cases the average level of QM maturity was equal to the value between 3 and 4. The highest QM maturity level achieved surveyed organizations from Poland – average value equal to 3,79 points. The next score attained surveyed organizations from Ukraine – 3,63 points. The lowest level of QO maturity had organizations from Serbia – the average value equal to 3,1. Therefore there were no reasons to reject also the second hypothesis. It confirmed the results of analysis each of two detailed hypotheses. The conducted survey confirmed that the level of QO maturity in organizations in Poland is slightly higher than in organizations in Ukraine and definitely higher than in organizations in Serbia.

Conclusions

The data collected from the developed questionnaire and their analysis allows us to answer the research questions and make some important observation. First of all the measurement of Quality Orientation maturity level (implementation of the eight quality management principles) in conducted survey confirmed that the level of QO maturity is on the average level in organizations coming from Poland. For that reason there was no reason to reject the first hypothesis. But there is the diversification of maturity results among individual quality management principles.

The next stage of the study showed that the level of Quality Orientation maturity in organizations in Poland only slightly differ from the level of QO maturity in organizations from abroad. The average level of QO maturity was achieved by the surveyed organizations regardless of the country they represented. In all three cases the average level of QM maturity was equal to the value between 3 and 4. The highest QM maturity level achieved surveyed organizations from Poland (3,79). The next were organizations from Ukraine (3,63). The lowest level of QO maturity had organizations from Serbia (3,1). Summarize the conclusions of survey results there can be observed that the level of QO maturity in organizations in Poland is higher than organizations in Serbia and in Ukraine. It means that also the second hypothesis was not rejected. The conducted survey confirmed that the level of QO maturity in organizations in Poland is slightly higher than in organizations in Ukraine and definitely higher than in organizations in Serbia.

The main research limitations of this paper include that the results concerning only surveyed sample.

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COMPARATIVE ANALYSIS OF ISO DOCUMENTS - EN 9001:2008 AND GS-R-3

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Introduction

The term of a standard is nowadays used in numerous fields of human life, whereas a standardising activity exerts a significant impact on economic development, trade, services as well as on the areas of human existence. Standards and their use in technical regulations concerning products, services and production methods play the key role in the sustained development by promoting quality and safety in every area of human existence. Designing, creating and functioning of the units generating nuclear energy is strictly connected with a number of threats both for a human and the entire environment. Thus, creating, issuing and subsequently deploying branch standards in this particular scope seems to be justified. Their aim is to support system solutions in the field of quality, environment management and broadly understood safety.

Among ISO standards within quality system management we may indicate the document ISO-EN-9001:2008, similar solutions directed typically towards units generating energy are included in the standard IAEA GS-R-3 The Management System for Facilities and Activities Safety Requirements.

The aim of this study was to conduct a comparative analysis of the following documents: ISO-EN 9001:2008 and GS-R-3 as well as to indicate basic similarities and differences. In order to reach this aim methods of literature critical studies and comparative analysis were used.

Rudiments of standardization

The term of sustained development is most frequently associated with the environment, however in reality it is much broader and means the use of economic development in order to increase justice of redistribution while demonstrating simultaneous respect for ecosystems and natural resources

(Strange & Bayley 2008). However the essence of sustained development is the concurrent consideration of three basic elements: society, economy and environment. In the policy of sustained development, the particular role is played by: metrology, compatibility assessment and standardization, which very often are defined as the pillars of this development (Łańcucki 2010). The said pillars are strictly connected with each other and they counteract with each other, whereas the effective implementation of activities performed by the said pillars strengthens the sustained development and social security.

Standardization is a voluntary cooperation between industry, consumers, public authorities and other interested parties for the benefit of developing technical specifications based on consensus (KOM 2008). In the standard PN-EN 45020:2009 standardization is defined as: the activity aiming to achieve an optimum degree of order in a defined scope and in particular circumstances by designating statements designed for common and repeated application, concerning existing problems or problems that will probably occur in the future (PN-EN 45020:2009). The aims of the above mentioned activity include in particular: elaboration, issuance and implementation of standards. According to the document PN-EN 45020:2009, this standard is a document adopted by way of a consensus, approved by an authorised organizational unit, making rules, guidelines or characteristics (for common and repeated application) relating to various kinds of activity or their results, and aiming to achieve an optimum degree of order within specified scope (PN-EN 45020:2009).

The subject of standardization may be a product, process or a service. It may also be any material, component, equipment, procedure or method, management system or any area of activity. Formal standardization is conducted at three levels and it covers domestics, national and international standardization organizational units. Informal standardization is conducted by particular industries or enterprises. Its subjective and temporal scope as well as geographical range are completely different (Łańcucki 2010).

Role of standardization in the sustained development exampled by IAEA

The International Atomic Energy Agency - IAEA is the world's centre of cooperation in the nuclear field. It was set up as the world´s "Atoms for Peace" organization in 1957 within the United Nations family. Its principal objective is “to accelerate and enlarge the contribution of atomic energy to peace, health and prosperity throughout the world”. The Agency works with its Member States and multiple partners worldwide to promote safe, secure and peaceful nuclear technologies. The IAEA works for the safe, secure and peaceful uses of nuclear science and technology. Its key roles contribute to international

peace and security, and to the world's Millennium Goals for social, economic and environmental development.

The Headquarteres of Agency are situated in Vienna, Austria. Secretariat is a team of 2300 multi-disciplinary professional and support staff from more than 100 countries. The Agency is led by Director General Yukiya Amano and six Deputy Directors General who head the major departments. The IAEA runs or supports research centers and scientific laboratories in Vienna and Seibersdorf, Austria, Monaco, and Trieste, Italy.

IAEA programs and budgets are set through decisions of its policymaking bodies - the 35-member Board of Governors and the General Conference of all Member States. Reports on IAEA activities are submitted periodically or as cases warrant to the UN Security Council and UN General Assembly.

The IAEA's mission is guided by the interests and needs of Member States, strategic plans and the vision embodied in the IAEA Statute Three main pillars - or areas of work - underpin the IAEA's mission: Safety and Security, Science and Technology, and Safeguards and Verification.

Specification of IAEA functioning and undertakings connected with IAEA increase the level of standardizing activity within this scope. Development of nuclear energetics is strictly connected with an extremely high risk of occurrence of unprofitable consequences both in natural environment and human working environment. According to the idea stating that standardization is one of the pillars of sustained development, standardization documents drawn up and issued by IAEA, acquire considerable significance. We should emphasise the fact that these standards are compatible with international standards within the scope of quality, environment and working environment.

IAEA safety standards reflect an international consensus on what constitutes a high level of safety for protecting people and the environment. They often serve as safety regulatory documents. In practice, to be fully effective the IAEA safety standards need to be complemented by industry standards and must be implemented within an appropriate national regulatory infrastructure. The IAEA produces a wide range of technical publications and reports to help Member States in developing this national infrastructure and the associated standards.

Presentation of ISO-EN 9001:2008 Quality Management Systems. Requirements

ISO portfolio includes more than 18 100 standards related to economy, management and society covering practical solutions for all three dimensions

of economic, environmental and social sustained development. ISO standards provide us with numerous solutions and assist in the achievement of benefits for the majority of activity sectors, among others, agricultural, construction, industrial, distributive, informational and communicational activity as well as activity connected with the environment and energetics. ISO standards are the result of global consensus concerning the most modern technology or good practices (Łańcucki 2010).

One of the ISO standards which regulates system aspects within the scope of quality management, is the standard: ISO 9001:2008. It is the result of a long-term evolution, in the course of which its content and versatility of provisions was improved and it was adjusted to the needs dictated by constantly changing surrounding [Łunarski 2008]. The most current, fourth issue of this standard replaces the document of the year 2000; in principle the novelisation does not introduce any new requirements. This document includes explanations to ISO 9001:2000 requirements as well as changes aiming to improve the cohesion with the ISO standard ISO 14001:2004. The scope of the standard is presented in Figure 1.

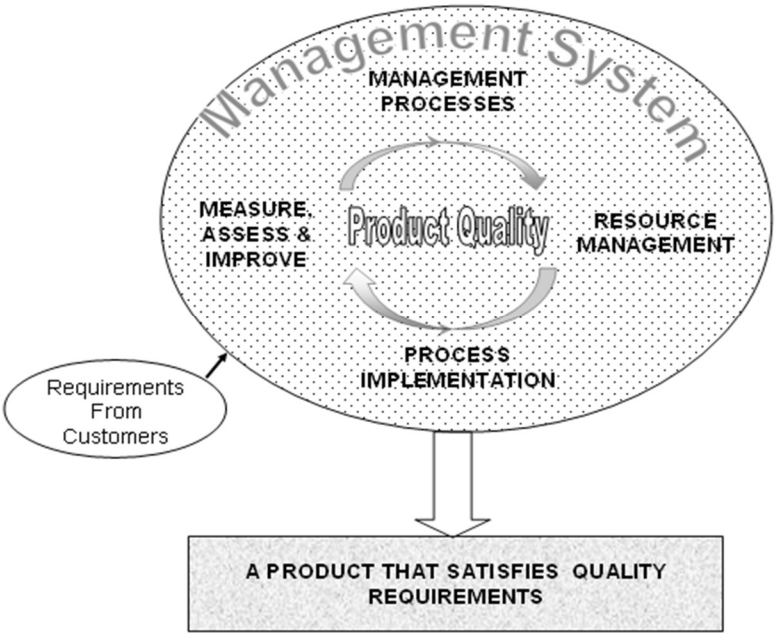

Figure 1. The scope of the standard ISO-EN 9001:2008 Quality Management Systems. Requirements

Source: (Boogaard 2012)

The achievement of the following aims by a given organization determines the structure of a standard (Łunarski 2008):

- demonstration of organization's ability of constant supply of a product meeting client's requirements and the requirements included in appropriate provisions,
- pursuit to increase client's satisfaction by effective application of a system, including processes concerning the continuous system improvement and assurance of compatibility with clients' requirements and requirements of legal provisions and supervisory regulations.

The document is composed of eight parts:

1. The scope of the standard.
2. Competent standards.
3. Terms and definitions.
4. Quality management system.
5. Management responsibility.
6. Control of resources.
7. Product implementation.
8. Measurements, analysis and improvements.

All requirements included in the discussed standard are of general character and are designated for application by all organizations regardless of their type, size or conducted activity. The standard can be applied by internal and external parties, including certification units, in order to examine whether an organization is able to meet client's requirements, requirements included in legal provisions and organisation's own requirements (Łunarski 2008).

Presentation of IAEA GS-R-3 The Management System for Facilities and Activities Safety Requirements

IAEA GS-R-3 The Management System for Facilities and Activities Safety Requirements defines the requirements for establishing, implementing, assessing and continually improving a management system. A management system designed to fulfill these requirements integrates safety, health, environmental, security, quality and economic elements. Safety is the fundamental principle upon which the management system is based. These requirements must be met to ensure the protection of people and the environment and they are governed by the objectives, concepts and principles of the IAEA Safety Fundamentals publication (GR-S-3). In figure 2 was presented the scope of the standard IAEA GS-R-3 The Management System for Facilities and Activities Safety Requirements.

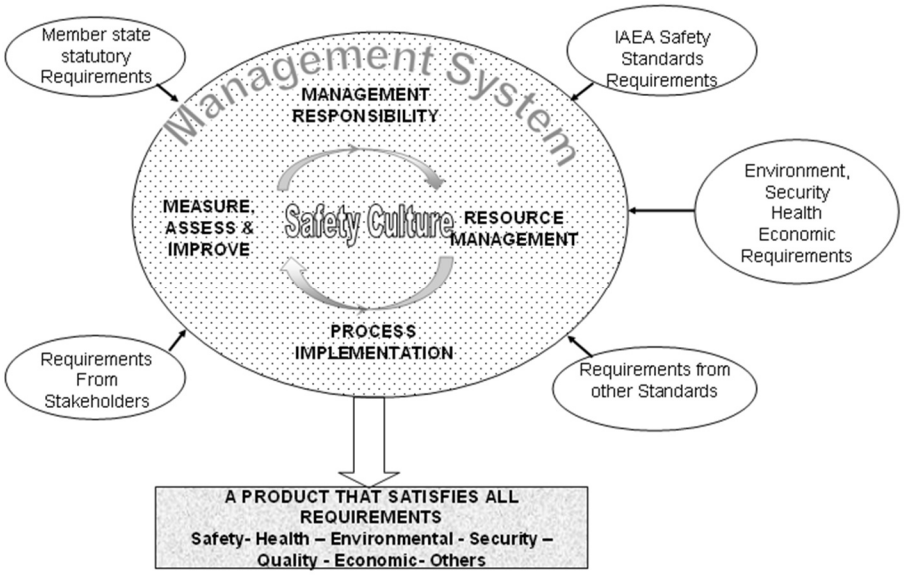

Figure 2. The scope of the standard IAEA GS-R-3 The Management System for Facilities and Activities Safety Requirements

Source: (Boogaard 2012)

The requirements established in IAEA GS-R-3 may be used by organizations in the following ways:

- as the basis for the management systems of organizations directly responsible for operating facilities and activities and providing services,
- as the basis for the regulation of these facilities and activities by the regulatory body,
- as the basis for the management systems of the relevant regulatory bodies (OHSAS 18001:2007),
- by the operator, to specify to a supplier, via contractual documentation, any specific requirements of this Safety Requirements publication that must be included in the supplier's management system for the supply and delivery of products.

This publication is applicable to the establishment, implementation, assessment and continual improvement of management systems for:

- nuclear facilities,
- activities using sources of ionizing radiation,
- radioactive waste management,
- the transport of radioactive material,
- radiation protection activities,

– any other practices or circumstances in which people may be exposed to radiation from naturally occurring or artificial sources,
– the regulation of such facilities and activities.

This Safety Requirements publication is applicable throughout the lifetime of facilities and for the entire duration of activities in normal, transient and emergency situations. This includes any subsequent period of institutional control that may be necessary. For a facility, these phases usually include sitting, design, construction, commissioning, operation and decommissioning

Comparison of standards – results and discussion

This Subsection was elaborated on the basis of sources: (IAEA 2012) and (Boogard 2012). IAEA GS-R-3 establishes management system requirements for nuclear facilities and activities for operating organizations, but also for other interested parties, such as regulatory bodies, suppliers and customers. Where International Organization for Standardization and other standards are used, an appropriate and adequate safety management system can be achieved by imposing additional requirements on an organization, over and above those contained within the ISO 9001:2008 standard on Quality Management Systems.

First, similarities were discussed. Both IAEA GS-R-3 and ISO 9001:2008 are based on the following common management principles, which reflect good management practices:

– customer focus,
– leadership,
– involvement of people,
– process approach,
– systematic approach to management,
– continual improvement,
– factual approach to decision making,
– mutually beneficial supplier relationships.

The basis similarities in these documents is:

– lead to integrated management systems although to varying degrees,
– require management system documentation but with difference in detailed requirements,
– make reference to stakeholders although with differences in scope,
– require workers to have the level of competence required to do assigned work,

- require the provision of training or other action to achieve the required level of competence,
- require the evaluation of the effectiveness of training or other action provided,
- standards adopt the process approach, based on the concept that work may be structured and interpreted as a set of interacting processes,
- standards put emphasis on internal and external communication, even though there are differences in intent, scope and terminology,
- standards require reviews of the management system,
- standards provide for monitoring, measurement and assessment of performance,
- standards promote a culture of continual improvement,
- standards can be used by external parties, as the basis of assessing the organisation's management system,
- standards can be used by a nuclear facility operator to impose requirements on suppliers,
- use the concept of 'product' to mean both items and services.

Both standards specify requirements for use by an organization internally, or for contractual purposes, to enhance and demonstrate the effectiveness of its management system. Both standards can be used by external parties as the basis of assessing the organization's management system.

Then, there come differences. Differences of focus and similarities of structure between IAEA GS-R-3 and ISO-EN 9001:2008 were presented in figure 3.

Major differences in focus in both documents are:

- IAEA GS-R-3 focus is safety (promotion of safety culture an integral part),
- ISO focus is customer satisfaction.
- Major difference occurs in degree of integration:
- GS-R-3 requires integration of requirements (health, environment, security, quality, economic and risk)
- ISO 9001:2000 has no requirement to integrate safety, health, environmental, security, quality and economic elements
- ISO does not integrate the requirements of other codes, systems, or parties, but GS-R-3 does

There are also differences in terminology used:

- interested parties or stakeholders (GS-R-3),

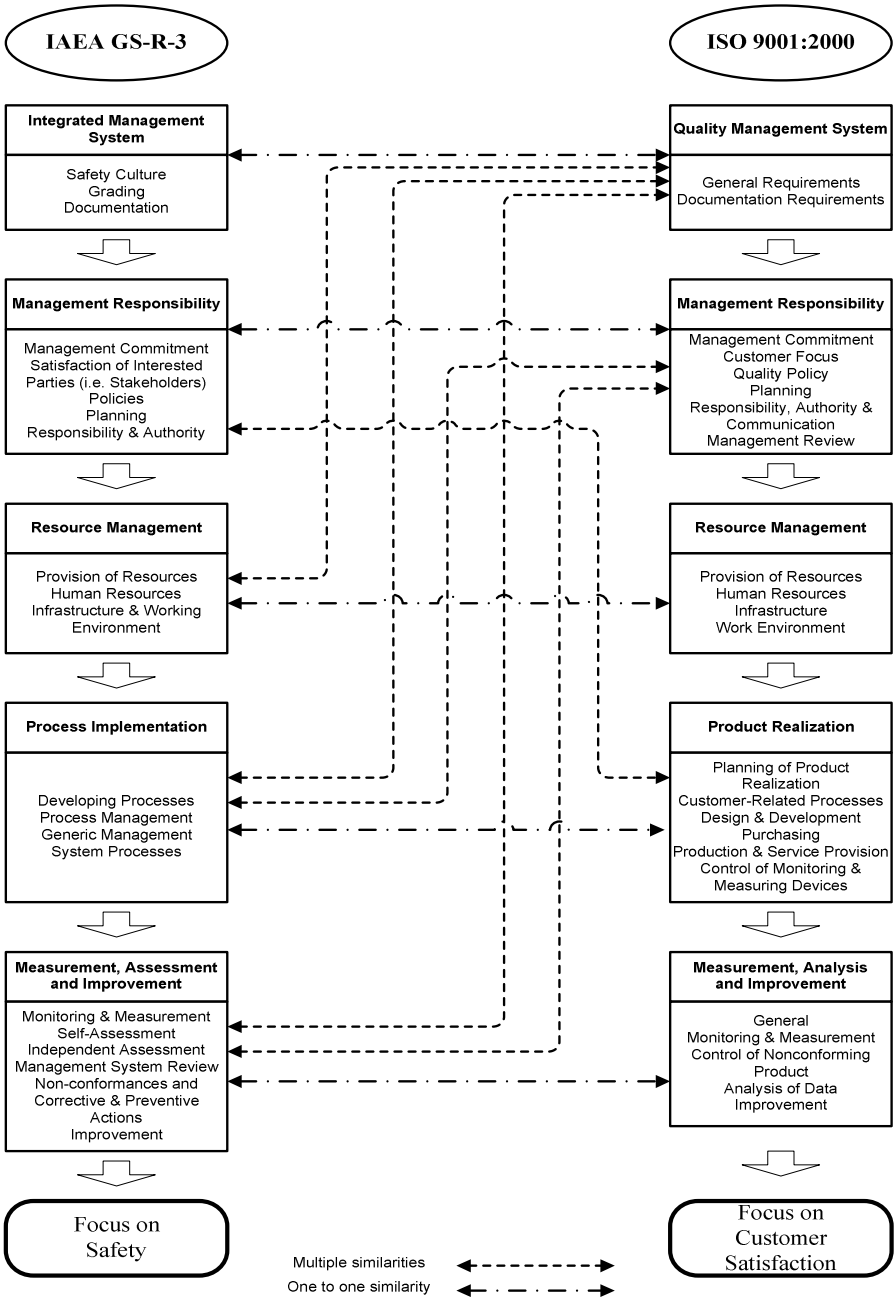

Figure 3. Differences of focus and similarities of structure between IAEA GS-R-3 and ISO-EN 9001:2008

Source: (IAEA 2012)

– customers, suppliers and organisations (ISO-EN 9001:2008).
– differences in level of detail of requirements:
– GS-R-3 are basic requirements with detail provided in supporting guidance documents,
– ISO 9001:2000 more detailed but provides no guidance,
– GS-R-3 requires proactive strategic planning integrating all goals, strategies, and objectives,
– ISO focuses on operational level product quality (seeks to meet customer and regulatory requirements applicable to a product),
– GS-R-3 seeks stakeholder satisfaction and ISO seeks customer satisfaction.
– Differences in specification of processes:
– review of requirements (more detail in ISO),
– design is a process and no details in GS-R-3,
– other product realisation stages (more detail in ISO),
– control of monitoring and measuring devices,
– customer property (no mention in GS-R-3),
– managing organisational change (only product change addressed in ISO, not changes to the organisation).

This is shown in figure 3.

Differences between IAEA GS-R-3 and ISO 9001:2008 exist, as the objectives, approaches and perspectives adopted in developing the requirements in each standard are different. IAEA GS-R-3 requires that health, environmental, security, quality and economic requirements be considered in conjunction with safety requirements, to help preclude possible negative impacts on safety. The approach used in the ISO standards is to develop requirements specific to a given area (quality management or environmental management) and leave it to an organization to select and use the set of ISO standards relevant to its areas of operation. Comparing the requirements of one such standard with those of an integrated management system standard will reveal inherent differences between them.

Conclusions

New economic challenges, accelerated market cycles, technology convergence also the one connected with acquisition of nuclear energy and ecology and social challenges as well as market globalisation - all these factors contribute to the fact that standardising activity has to adjust to the

pace of changes that take place in the contemporary economy in order to support its innovation and competitiveness.

Standardised management systems constitute one of the devices that can be used in the process of organization management. These systems favour the establishment of indispensable minimum set of requirements the meeting of which should allow for the achievement of planned results compliant with the requirements of customers (Łunarski 2008). However, the necessity of the use of branch requirements specific for nuclear energy, which are an ideal complement of the standards of the International Organization for Standardization, must be emphasised.

Comparative analysis showed that both IAEA GS-R-3 and ISO 9001:2008 are based on the following common management principles, which reflect good management practices. Major differences in both documents occur in focus: in IAEA GS-R-3 focus is safety (promotion of safety culture an integral part), while in ISO focus is customer satisfaction. Also, major difference occurs in degree of integration: GS-R-3 requires integration of requirements (health, environment, security, quality, economic and risk) while ISO 9001:2000 has no requirement to integrate safety, health, environmental, security, quality and economic elements There are also differences in terminology used and in specification of processes.

Specification of the functioning of organization units generating nuclear energy forces the organizations to implement and apply standards regulating system aspects connected among others with safety. The most important element of standards issued by IAEA is the safety culture.

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SYSTEM APPROACH TO QUALITY AND ENVIRONMENTAL MANAGEMENT SINCE 2015 -REVOLUTIONARY OR EVOLUTIONARY CHANGES?

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Introduction

Normalized quality and environmental management systems have been used for several decades. The first standards in the range of systematic approach to quality assurance were introduced in 1987, i.e. 27 years ago. The ISO 14001 standard linked with systematic approach to environmental management was first applied in 1996. At that time both standards gained enormous popularity (in particular the ISO 9001 standard) and systematized the language of business worldwide. Undoubtedly the systematic approach to quality and environmental management was popularized among various types of organizations, active in both production and services, independent of their size and profile. In Poland in 1990s we could observe common interest in achieving certificates confirming the functioning of quality and environmental management systems in enterprises. In particular, after Poland joined the European Union the popularity of "the ISO 9001 and ISO 14001 certificates" has significantly grown. The implementation of a quality and environmental management systems in compliance with the ISO 9001 and ISO 14001 standards communicates the idea that a given enterprise pays attention to international standards and aims at enhancing its actions in the aspect of increasing the quality of products and minimizing the negative influence on the environment.

There have been several amendments introduced since the emergence of the ISO 9001 and ISO 14001 standards. It means that the standards have evolved in order to adjust to new market requirements and fluctuating trends in management. The last update of the ISO 9001 standard was introduced in 2008, whereas the analogical change in reference to the ISO 14001 standard took place in 2004. Unfortunately, the modifications were not revolutionary in comparison with the amendment of the ISO 9001 standard in 2000.

Insufficiency of substantial changes in both standards was so notable that in 2012 the first measures were taken in order to revise the requirements of the ISO 9001 and ISO 14001 standards. The main assumption behind the updates is to increase the integration with other standards related to management of a modern organization, e.g. risk management.

The aim of the present paper is to illustrate the planned changes in the ISO 9001 and ISO 14001 standards. Furthermore, we will try to indicate if the changes are revolutionary or evolutionary in the process of implementation in a given organization.

The genesis of the ISO 9001 and ISO 14001 amendments

The first standard of the ISO 9000 series was published 28 years ago, when the International Organization for Standardization introduced the ISO 8402 – Quality - Terminology standard. In 1987 next standards were published: ISO 9001, ISO 9002, ISO 9003. These standards presented three management models (Borys et al. 2007) and where characteristic of different groups of organizations. The ISO 9001 standard included 20 points (requirements) and was related to organizations which realize the design process within their production and service processes. The ISO 9002 standard included 19 requirements and was linked with the quality assurance system without designing. The least popular standard was ISO 9003 which included 16 points referring mainly to service organizations.

Within the following years the standards were amended to various extents. In 1994 the changes were focused on the holistic embracement of the product life cycle – from the moment at which the client expresses his need to the moment when he uses the product (Borys et al. 2007). It should be emphasized that the standards of ISO 9000 series until 2000 were linked with systematic approach to quality assurance. By contrast, standards in the range of systematic approach to environmental management have been always related to the issue of environmental management. The history of the ISO 9001 and ISO 14001 amendments is illustrated in Table 1.

The critical amendment of ISO standards of 9000 series took place in 2000. The numbers of quality models was limited and process approach was introduced. Moreover, the convergence of the standard and TQM conception (based on quality management rules) was embraced. Not only was the structure of the standard altered but also a bigger compatibility with ISO 14001 was assured.

The following update of the standard in 2008 introduced minor changes, without significant modification of the version published in 2000, though. Several definitions were changed and some terms were specified. This version does not introduce any additional requirements.

Table 1. History of the ISO 9001 and ISO 14001 amendments

Date of publication	Standard	Key changes in the standard
1987	ISO 9001 ISO 9002 ISO 9003	Quality systems – Model for quality assurance in design/ development, production, installation and servicing Quality systems – Model for quality assurance in production and installation Quality systems – Model for quality assurance in final inspection and test First edition of standards
1994	ISO 9001 ISO 9002 ISO 9003	Quality systems – Model for quality assurance in design/ development, production, installation and servicing Quality systems – Model for quality assurance in production and installation Quality systems – Model for quality assurance in final inspection and test Second edition of standards Insignificant changes in the standard
1996	ISO 14001	Environmental management system – Specification with guidance for use First edition of the standard
2000	ISO 9001 ISO 9004	Quality management systems – Requirements Quality management systems – Guidelines for performance improvements Third edition of standards Significant changes. Introduction of process approach. Three standards were replaced by the ISO 9001 standard. Bigger compatibility with ISO 14001 standard
2004	ISO 14001	Environmental management systems – Requirements with guidance for use Second edition of the standard. Insignificant changes. More compatible with ISO 9001 standard
2008 2009	ISO 9001 ISO 9004	Quality management systems – Requirements Managing for the sustained success of an organization – A quality management approach Fourth edition of standards Insignificant changes which specifying some term in ISO 9001. Big modifications in order to assure balanced development of a company in ISO 9004 standard
2015	ISO 9001 ISO 14001	Another amendment. Significant changes in the range of reorganizing the structure of the standard and including risk management in substantial requirements.

Source: own research

Basic assumptions of the ISO 9001 and ISO 14001 amendments

In October 2011 during a meeting of Liaison Committee ISO/TC 176/SC2, *Quality systems*, a decision about the necessity of amending the ISO 9001 standard was made mainly after survey consultation with users of the

standard. Similarly, towards the end of 2011 during a meeting of Liaison Committee ISO/TC 207/SC1, *Environmental systems*, the decision about amending the ISO 14001 standard was made.

When asked about the elements which should be included in the amended ISO 9001:2015 standard enterprises which implemented the requirements of the standard indicated that the key area for changes are: resource management, customer orientation, risk management, knowledge management, activity measurement and systematic problem-solving (ISO 9001:2015. Revision, 2012).

Moreover, users of quality management systems in compliance with ISO 9001 and environmental management systems in compliance with ISO 14011 unequivocally stated that the standards should be significantly changed in order to be more integrated. It should be noted that the ISO 9004 standard created in 2004 altered its structure and its conception of an organization heads towards balanced development which was not included in the ISO 9001:2008 standard. The present version of the ISO 9001 standard appeared to be incompatible with ISO 9004:2009, which confirmed the opinion that the amendment process should be launched.

The main assumptions, on the basis of which representatives of the TC 176/SC1 committee decided to update the standard, may be as follows (Kloze, 2013):

- extending the content of requirements with issues related to risk management,
- compliance with guidelines included in *„ISO/IEC Directives, Part 1, Consolidated ISO Supplement, 2013, Annex SL"* which embraces settlements about e.g. assuring coherent structure, terminology and basic content as well as rules of introducing new requirements/remarks into the basic document,
- compliance with guidelines included in the ISO 9004:2009 standard. *Managing for the sustained success of an organization – A quality management approach*.

The main assumptions, on the basis of which representatives of the TC207/SC1 committee decided to update the standard, may be as follows (Revision of ISO 14001, 2014):

- extending the content of requirements with issues related to risk management,
- based on the ISO/TMB approved requirements and application guidance related to the JTCG work on the High Level Structure (HLS) for Management System Standards (MSS) and its identical text, common terms and core definitions,

- consider the final report of the ISO/TC 207 SC1 “Future Challenges for EMS” Study Group,
- ensure the maintenance and improvement of the basic principles of ISO 14001:2004, and also the retention and improvement of existing requirements.
- The main assumptions of the amended ISO 9001:2015 and ISO 14001:2015 standards are:
- providing the organizations with an appropriate set of requirements for the next 10 years;
- better adjustment to all types and sizes of organizations;
- putting emphasis on effective process management in order to assure achievement of expected results;
- taking into account technological and systematic changes in quality management since 2000;
- simplifying implementation and interpretation of requirements by organizations, their suppliers and certification companies;
- describing the standard’s requirements in a simple language and assure proper interpretation.

General changes

The first crucial change concerns the structure of the ISO-Standard. The standard was written along the lines of the so-called „High Level Structure“, which will gradually be introduced as the main structure for all ISO-standards. When it comes to the integration of multiple standards, this unified structure will considerably facilitate the implementation process.

The ISO 9001 and ISO 14001 standards will consist of ten main sections. There first sections will remain the dame (scope, normative references, terms and definitions). However, the compatible subsequent paragraphs, are:

– context of organization,
– leadership,
– planning,
– support,
– operation,
– performance evaluation,
– improvement.

Table 2. The structure of the new ISO 9001 and ISO 14001 standards

ISO 9001:2015	**ISO 14001:2015**
Foreword	Foreword
Introduction 0.1 General 0.2 The ISO standards for quality management 0.3 Plan-Do-Check-Act cycle 0.4 Risk based thinking 0.5 Compatibility with other management system standards	Introduction 0.1 Background 0.2 Aim of an environmental management system 0.3 Success factors 0.4 Plan, Do, Check and Act approach 0.5 Contents if this International Standard
1. Scope	1. Scope
2. Normative references	2. Normative references
3. Terms and definitions	3. Terms and definitions
4. Context of the organization 4.1 Understanding the organization and its context 4.2 Understanding the needs and expectations of interested parties 4.3 Determining the scope of the quality management system 4.4 Quality management system and its processes	4. Context of the organization 4.1 Understanding the organization and its context 4.2 Understanding the needs and expectations of interested parties 4.3 Determining the scope of the environmental management system 4.4 Environmental management system
5. Leadership 5.1 Leadership and commitment 5.2 Quality policy 5.3 Organizational roles, responsibilities and authorities	5. Leadership 5.1 Leadership and commitment 5.2 Environmental policy 5.3 Organizational roles, responsibilities and authorities
6 Planning for the quality management system 6.1 Actions to address risks and opportunities 6.2 Quality objectives and planning to achieve them 6.3 Planning of changes	6 Planning 6.1 Actions to address risks associated with treats and opportunities 6.1.1 General 6.1.2 Significant environmental aspects 6.1.3 Compliance obligations 6.1.4 Risk associated with threats and opportunities 6.1.5 Planning and take action 6.2 Environmental objectives and planning to achieve them 6.2.1 Environmental objectives 6.2.2 Planning actions to achieve environmental objectives
7 Support 7.1 Resources 7.1.1 General 7.1.2 People 7.1.3 Infrastructure 7.1.4 Environment for the operation of processes 7.1.5 Monitoring and measuring resources 7.1.6 Organizational knowledge 7.2 Competence 7.3 Awareness 7.4 Communication 7.5 Documented information 7.5.1 General 7.5.2 Creating and updating	7 Support 7.1 Resources 7.2 Competence 7.3 Awareness 7.4 Communication 7.4.1 General 7.4.2 Internal communication 7.4.3 External communication 7.5 Documented information 7.5.1 General 7.5.2 Creating and updating 7.5.3 Control of documented information

8 Operation 8.1 Operational planning and control 8.2 Determination of requirements for products and services 8.2.1 Customer communication 8.2.2 Determination of requirements for products and services 8.2.3 Review of requirements related to products and services 8.3 Design and development of products and services 8.3.1 Design and development planning 8.3.2 Design and development inputs 8.3.3 Design and development controls 8.3.4 Design and development outputs 8.3.5 Design and development changes 8.4 Control of externally provided products and services 8.4.1 General 8.4.2 Type and extent of control of external provision 8.4.3 Information for external providers 8.5 Production and service provision 8.5.1 Control of production and service provision 8.5.2 Identification and traceability 8.5.3 Property belonging to customers or external providers 8.5.4 Preservation 8.5.5 Post-delivery activities 8.5.6 Control of changes 8.6 Release of products and services 8.7 Control of nonconforming process outputs, products and services	8 Operation 8.1 Operational planning and control 8.2 Emergency preparedness and response
9 Performance evaluation 9.1 Monitoring, measurements, analysis and evaluation 9.1.1 General 9.1.2 Customer satisfaction 9.1.3 Analysis and evaluation 9.2 Internal audit 9.3 Management review	9 Performance evaluation 9.1 Monitoring, measurements, analysis and evaluation 9.1.1 General 9.1.2 Evaluation of compliance 9.2 Internal audit 9.3 Management review
10 Improvement 10.1 General 10.2 Nonconformity and corrective action 10.3 Continual improvement	10 Improvement 10.1 Nonconformity and corrective action 10.3 Continual improvement
Annex A Clarification of new structure, terminology and concepts	Annex A Guidance on the use of this International Standard
Annex B Quality management principles	Annex B Correspondence between ISO/DIS 14001:2014 and ISO 14001:2004
Annex C The ISO 10000 portfolio of quality management standards	Annex C Alphabetical index of terms in Clause 3
Bibliography	Bibliography

Source: own research

On the structural level, a separate section on preventive measures is significantly absent. The new standard no longer thinks of preventive

measures as a separate topic, but rather as a central component of all environmental-related activities.

Another general change concerns the procedure to determine conformity of the management-system with the ISO-standard. The control and evaluation of conformity is to become a continuous task, in order to prevent non-conformities in the earliest possible stage.

Revision of ISO 9001 standard

The planned new edition of the ISO 9001 standard will be constructed differently than the two previous versions from 2000 and 2008. It can be stated that after reading the proposal of chapter contents that the changes will be significant and will influence the shape of organization management model.

Due to the fact that the amendment of ISO 9001 in 2008 introduced rather minor changes and only specified some matters the 2015 update is expected to bring major modifications of the standard.

It should be emphasized that the new standard is a step towards service companies, because the content is altered so as that it is easier to be understood and implemented, e.g. the word "product" is replaced with "products and services" (McRea, 2013).

The new version will follow a new, higher level structure to make it easier to use in conjunction with other management system standards, with increased importance given to risk.

The ISO 9001:2015 standard was enriched with new subchapters which will cause the obligation to substantially review processes and systematic documentation for the organizations with ISO 9001 certificates (Gronowicz, 2013).

Another interesting change in the ISO 9001:2015 standard is replacing the terms "document" and "record" with the term "documented information". Nowadays organizations, which implement the ISO 9001:2008 standard, usually combine monitoring procedure with records into one integrated procedure. In the ISO 9001:2015 standard organizations are obliged to supervise documented information with no distinction between documents and records. In terms of required systematic documentation the ISO 9001:2015 standard does not require obligatorily defined number of documented procedures (ISO 9001:2008 required 6 documented procedures). However, it does not mean that they will disappear. Now organizations will have more freedom during describing the quality management system and will have to meet the requirement included in 8.1.c, i.e. they will be obliged to keep documented information in the needed scope in order to make sure the processes will have been realized according to the plan (Gronowicz, 2013).

There are following main changes in ISO 9001:2015 standard revision (www.asq.0051.org):

- an emphasis on risk-based thinking,
- increased emphasis of achieving value for the organization and its customers,
- increase flexibility on the use of documentation,
- more readily applicable by “service” type organizations,
- use of the High Level Structure (HLS),
- improved applicability for services,
- fewer prescribed requirements,
- increased emphasis on organizational context,
- boundaries of the QMS must now be defined,
- consideration of exclusions,
- risk-based thinking throughout the standard supersedes a single clause on preventive action,
- the term “documented information” replaces “documents and records”,
- the term “outsourcing” is replaced by “external provision”,
- increased leadership requirements,
- no requirement for a management representative.

There are some changes to requirements (www.asq0511.org):

- objectives must include reference to who, what, when,
- planning of changes,
- explicit reference to knowledge management,
- no need for a Quality Manual,
- operational planning includes addressing risk,
- greater emphasis on processes achieving requirements for goods or services and customer satisfaction,
- control of changes,
- monitoring and measurements,
- internal audits now require the consideration of related rosks,
- management review to take into consideration strategic direction of the organization.

Revision of ISO 14001 standard

The ISO 14001 standard will be significantly different from the previous version. The aim of introduced changes is to adjust the requirements included in the standard ISO 14001 to the requirements included in ISO 9001 in such way, so they are far more compatible in order to make it easier for organizations to implemented and integrate these management systems. The general direction of the changes already becomes visible in the updated list of terms and definitions (Chapter 3). Three new concepts have been added: "supply chain", „value chain" and „product life cycle". Taken together, these three terms are indicative of a broadened perspective upon the responsibility of companies, which now extends beyond the physical and legal boundaries of a company. It thus includes all environmental aspects in the influence sphere of a company, starting with the extraction of resources and including the entire life cycle of a product.

The main changes relate to the following areas (Lewandowska, Matuszak-Flejszman 2014):

- increasing expectations in relation to the highest management in regards to the leadership and commitment,
- far wider recognition of the organization's environmental context in its business strategy,
- organizations making their own commitments in terms of sustainable development and social business responsibility,
- introduction of the approach based on risks identification,
- taking into account the organization's environmental impact in the entire supply chain, including by requirements for suppliers and subcontractors, informing customers,
- using eco-design as a tool for development activities in order to achieve the effects in the organization's environmental performance,
- being ready to show at any time the status of the compliance with the legal requirements relating to the environmental protection and other requirements to meeting of which the organization committed,
- using the indicators of environmental performance in continuous improvement.

The main objective ISO 14001:2015 standard is to provide organizations with a systematic framework to protect the environment in balance with socio-economic needs. It does so by specifying requirements for an EMS that enables an organization to achieve environmental performance improved by (ISO/DIS 14001):

- developing and implementing an environmental policy and objectives,

- identifying aspects of its activities, products and services that can result in significant environmental impacts,
- establishing systematic processes which consider its context, and take into account its significant environmental aspects, risk associated with threats and opportunities and its compliance obligations,
- increasing awareness of its relationship with the environment,
- establishing operational controls to manage its significant environmental aspects and compliance obligations,
- evaluating environmental performance and taking actions, as necessary.

There are some paragraphs compatible with ISO 9001: context of organization, leadership, planning, support, operation, performance evaluation and improvement.

Within the scope of „context of organization" the following requirements must be mentioned (ISO/DIS 14001):

- understanding the organization and its context – external and internal issues that are relevant to purpose of organization and that affect ability of organization to achieve the intended outcome of EMS,
- understanding the needs and expectations of interested parties that are relevant to the EMS and requirements of these interested parties which of these become compliance obligations,
- determining the scope of the environmental management system and consider external and internal issues, compliance obligations, organizational units, functions and physical boundaries, activities, products, services and authority and ability to exercise control and influence,
- environmental management system to continually improve organizational environmental performance.

Another important area, in which many amendments are planned, is leadership. According to the new standard, the top management shall demonstrate leadership and commitment with respect to the EMS by (ISO/DIS 14001):

- taking accountability for the effectiveness of the environmental management system,
- ensuring that the environmental policy and environmental objectives are established and are compatible with the strategic direction of the organization,
- ensuring the integration of EMS requirements into the organization's business processes,
- ensuring that the resources needed for the EMS are available,

- communicating the importance of effective environmental management and of conforming to the EMS requirements,
- ensuring that the EMS achieves its intended outcomes,
- directing and supporting persons to contribute to the effectiveness of the EMS,
- promoting continual improvement,
- supporting other relevant management roles to demonstrate their leadership as it applies to their areas of responsibility.

Within the scope of the requirements relating to the environmental policy and the roles, responsibility and competences no significant changes have been introduced.

Within the requirements concerning planning, the paragraph has appeared relating to actions to address risks and opportunities. The requirements within this area will be discusses in the future. It is necessary to emphasis, however, that this area contains two matters that relate to (ISO/ DIS 14001):

- identification of environmental aspects and association environmental impacts of its activities, products and services that it can control and those that it can influence, considering a life cycle perspective and take into account change and abnormal and potential emergency situations, and determine of significant environmental aspects among the various levels and functions of the organization,
- identification and having access to the compliance obligations related to its environmental aspects, and determine of compliance obligations apply to the organizations,
- determine priorities to planning action which shall be documented,
- planning to take actions to address risk associated with treats and opportunities associated with significant environmental aspects, compliance obligations and issues, and how to integrate and improvement the actions into organization's EMS processes and evaluate the effectiveness of these actions.

Moreover, as part of the planning, the organization should define and document the environmental objectives taking into account the significant environmental aspects and its compliance obligations, consider the risk associated with treats and opportunities and consider technological options and its financial, operational and business requirements.

Section seven of the ISO 14001:2015 standard entitled "support" contains the following requirements: resources, competence, awareness, communication and documented information.

The section previously called operational control is now significantly more detailed, and is now acting as another main area: operation. Except operational planning and control, in this section there are also included the requirements regarding the value chain control. The organization shall determine how the processes associated with its value chain that are related to its significant environmental aspects and organizational risk associated with threats and opportunities will be controlled or influenced, taking into account life cycle perspective. The organization shall (ISO/DIS 14001):

- develop and specify environmental requirements for the procurement of goods and services,
- communicate relevant environmental requirements to suppliers, including contractors,
- consider its significant environmental aspects and risk associated with threats and opportunities as input in the process of the design, development or change of its products and services,
- consider the need to provide information about potential significant environmental impacts during the delivery of the goods or services and during use and end-of-life treatment of the product.

The requirement: Emergency preparedness and response has been added to the "operation" section, in which the changes introduced are rather cosmetic.

Section nine entitled: Performance evaluation contains three requirement relating to: monitoring, measurement, analysis and assessment, internal audit and management review. Management review contains the following elements (ISO/ DIS 14001):

- the status of action from previous management reviews,
- changes in external and internal issues that are relevant to EMS,
- changes in compliance obligations, significant environmental aspects and risk associated with threats and opportunities,
- the extent to which objectives have been met,
- information on the organization's environmental performance, including trends in nonconformities and corrective actions, monitoring and measurements results, fulfillment of its compliance obligations and audit results,
- communications from external interested parties,
- opportunities for continual improvement,
- the adequacy of resources required for maintaining an effective environmental management system.

The last section will relate to improvement. It contains requirements for nonconformities and corrective actions, and continual improvement, in

relation to which the organization should continually improve their performance, as well as environmental performance.

Conclusions

International standards of ISO 9000 and 14000 series have played an enormous role in popularizing systematic approach to quality and environmental management worldwide. They created a platform and common language for millions of organizations. The very fact of the standards' updates is an important piece of information – the standards embrace the latest solutions and tips linked with systematic approach to management.

While analyzing changes in the ISO 9001:2015 and ISO 14001:2015 standards we may observe that the new editions are to achieve main objectives related to other management systems. e.g. common vision, identical titles of subchapters, more user-friendly and understandable language, bigger compatibility with other management systems. Moreover, the authors of these standards are planning to continue the trend to adjust ISO 9001 and ISO 14001 to service organizations by using less technical language and introducing obligatory risk management into an organization's practices.

The changes in the ISO 9001:2015 and ISO 14001:2015 standards may be seen as the key to adjust an organization to new economic reality. Therefore, organizations will have three years to adapt to these standards. Furthermore, risk management related to quality, environment and business activity will play a significant role in enhancing the actions taken by organizations.

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INNOVATION POTENTIAL – INDICATORS FOR SME

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Introduction

After waves of higher interest about reengineering, quality management, and corporate culture, the innovations are today's solutions for success, survival and development in global and turbulent environment. Innovation and its management is not one of imperatives; but it is one of basic company`s internal factors of dynamics.

The concept of innovation and its role in competitiveness is not a new fashion; it comes with Schumpeter (1934) at least. There are different angles to see an innovation and a process of innovation. We can say that an innovation is based on novelty, i.e. an innovation is a difference from what we have and what has existed before now. If the difference can bring economical earnings by clients' satisfaction then it has open doors into companies.

The next step is an ability of a company to foster innovations. It means not to be passive in searching for opportunities, but to be active in preparing internal conditions for innovations – to have a potential for innovations. The paper is focused on this potential and ways of its measurement.

Potential definition and description

The word potential can be understood and used in different meaning:

I. it is something existing in possibility, it is the possibility of something happening or of someone doing something in the future (Merriam, 2014, Oxford, 2014),
II. it is about capability of development into actuality, about capability of becoming (Merriam, 2014, Oxford, 2014),
III. it is latent excellence or ability that may or may not be discovered and developed (Free, 2014).

While the starting two meanings are generally known and accepted, the third one, related to the latency, opens very wide doors for management and managers. If there is something latent, what can bring success in a future, then it must be utilised.

A potential as an ability is seen as a change between two statuses (Mizla, Bašistová, 2002, p.96) – existing one and desired one. It is possible to talk about fitness for change in a company, i.e. to realize an innovation. An unused potential represent idle capacity of the company. And it is important to discover it.

The turbulent environment of economic life comes with more risks and chances. A chance, in this sense, can be seen as an opportunity realised by existing conditions and abilities. To discover a potential is also about chances and their discovering. To examine a potential has changed from discovering processes (e.g. supply, financing) to discovering of process statuses. It is represented by a short interval of investment projects (e.g. realisation of an innovation, financial investment) in which a company has its eruption. The longer state of calmness is coming subsequently.

A potential is the difference, declination from a normal state; a difference from what is and what should be. A potential can act as an offer (source, transmitter) in case of surplus or as a need in case of scarcity. Potentials can stay in same, neutral or opposite direction as the realized change; or we can say that the potential has negative, neutral or positive sign. Opposed potentials, i.e. with opposite signs, create conjunction and synergy while potentials with same signs (positive or negative) create repulsion.

The conjunction has its manifestation in two opposite groups of people: for a change (positivists) and against the change (negativists). While the both groups are in opposition, their behavior is in conjunction. Positivists are looking for the best way of realization of the change and negativists are looking for weak points of the change, i.e. they are internal opponents who, by complaints, give signals to positivists for improvements of their activities.

The repulsion lay in different sorts of changes or in different ways of their realization. Formally, the both groups consists from positivists or negativists only, but they struggle (mostly as informal political alliances) for prioritization of their way of solution. As a result, we can summarize that while we talk about potentials of an organization then groups of people are holders of the potential and factual implementators of changes. We must remark that size of the both potentials is not symmetrical – one of them is usually stronger.

Dynamics of potentials shows that there are small positive and negative potentials at the beginning. The positive potential, i.e. a need for change, is getting growth. The need and size of the potential usually culminate at some

period of the change and then a negative potential starts to growth. Thanks to this, the negative potential starts to retard the desire and need for a change and leads a company to a stabile status sooner or later.

Concept of innovation

Peter Drucker (Drucker, 1985, p.6-10) said that *"the two drivers of business growth are innovation and marketing."* He also declared that the most successful innovations arise from "a conscious, purposeful search for innovation opportunities, which are found only in a few situations." Drucker also showed by examples (e.g. the first commercial banks, first computers) that innovation based on new knowledge has the longest lead time and is the least predictable. Innovative companies aren't just exceptionally lucky, but they have processes in place which nurtures innovation.

The ongoing economic crisis creates both short- and long-term pressures to change orientation of enterprises and other types of organizations. Currently, the organization lays the foundations of its long-term competitiveness (Figure 1) by developing a combination of innovation, methods for streamlining the organization of work and increasing productivity. Innovation management is only one of the internal factors which can make an organization more dynamic. Innovation management must ensure rational and effective management of the process of innovation and thus respond flexibly to customer needs in accordance with resources available to producers.

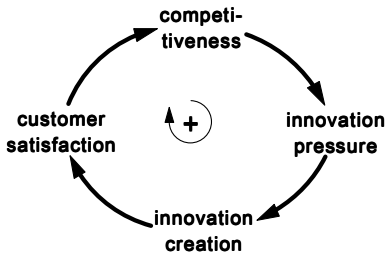

Figure 1. Basic innovation causality setting

Source: author

There are many different descriptions and definitions of innovations, e.g. innovation as a specific type of a useful change with its different representations and forms which are new to its customer. The most significant attribute is novelty – novelty of goods, services, processes or solutions – which have never been used in the entire world. This we can understand as a broader view. Notion, idea with its realisation should go hand in hand. In this case, the

idea is confronted and confirmed by its own realisation and vice versa – proper realisation has positive influence to generate more new innovation hints and ideas.

It is possible to understand innovation also as a way for commercialization of a novelty. In this case, the novelty is represented by changes in areas which are called by Tidd, Bessant a Pavitt (Tidd, 2007, p.549) as Innovation 4Ps (product, process, position and paradigm innovations). Each partial change as an innovation has always its main focus directed to one of the 4Ps.

The 4Ps are not isolated, but they interact and influence each other. If we assume that an innovation has its measures and its magnitude, what is not described in this article, then an innovation has its magnitude higher than zero in every of the 4Ps. Zhang and Xiao (2007, p.151) assume that there is an innovation trajectory among the areas. The trajectory has shape of a spiral moving through the areas. It means that there is not only one rotation for an innovation, but the innovation moves through the areas several times during its cycle of life in many rotations. What is more, the same novelty can manifest itself in different ways, with different focuses, i.e. one novelty can be naturally interpreted by different groups as different kinds of innovations.

Innovation process

One of paradigms about innovations is that an innovation is one of acts which can ensure a good business position in a future. If it is so, than innovation and mainly the process of innovation, according to the process orientation management, should be discovered, unlocked and utilised primarily. Any given concept or idea may or may not work, but the process over time does indeed work.

Innovation is a process by which organizations direct their resources to obtain benefits from science, technology and marketing opportunities. The mission of the innovation process is to create a new product and put it on the market (Figure 2). The whole process starts with the selection of appropriate ideas; and then it identifies possible benefits of a new product which goes through various testing until its final commercialization and placing on the market.

A particular innovation is realized by its project. The amount of concurrent innovative projects in an organization depends on the saturation of available resources in the organization, namely the capability of organizations to manage innovative projects.

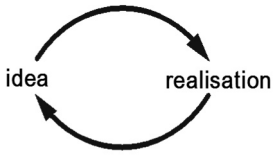

Figure 2. Basic innovation process

Source: author

The above mentioned innovation process needs to be adjusted for small and medium-sized enterprises (SMEs). According to the research carried out so far, it can be concluded that also SMEs undergo complex changes in business environment by the entry of foreign companies importing cheaper products or by moving production to lower-cost regions. Successfully overcoming the obstacles facing the SMEs, it was necessary to enhance the basic process of innovation (Figure 2) as illustrated in Figure 3:

1. **Impulse** - motive; creation and innovation needs of its realization.
2. **Invention** - idea to change the existing model (product, process, business).
3. **Imagination** - preparing and translating the invention into useable form (as a project).
4. **Industria** - physical production and realization of imagination on the market.

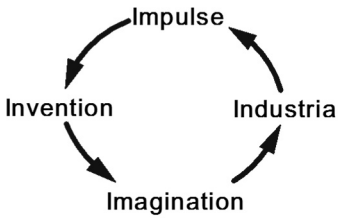

Figure 3. Innovation process – 4 I

Source: author

Tools for innovation potential measurement

Drucker also mentioned that innovation is a hard work, not work of a genius. It is not enough to think and to meditate about an innovation and an innovation potential, but it is important to know how big or small it is, whether there are positive changes, how significant they can be, how effective effort of managers to increase them exists. There is a simple and straight need for a group of indicators which can measure the innovation potential.

We can recognize four main approaches to the innovation potential measurement:

1. Direct or indirect counting by a simple set of indicators.
2. Sets of indicators from different more or less linked areas.
3. Different models of financial stability with their indexes.
4. Maturity approach.

Direct or indirect counting by a simple set of indicators.

Kastelle (Kastelle, 2012) has two-dimensional Innovation Matrix (Figure 4). The horizontal axis represents Innovation Commitment - innovation as a core value which is integrated into strategy; there is a supporting and improving system, resources available – and measures innovation inputs and innovation success. The vertical axis represents Innovation Competence – number of implemented innovations, innovation portfolio - what is about the ability to generate and executing new ideas successfully. There are proposed subsequent activities related to certain positions on the grid.

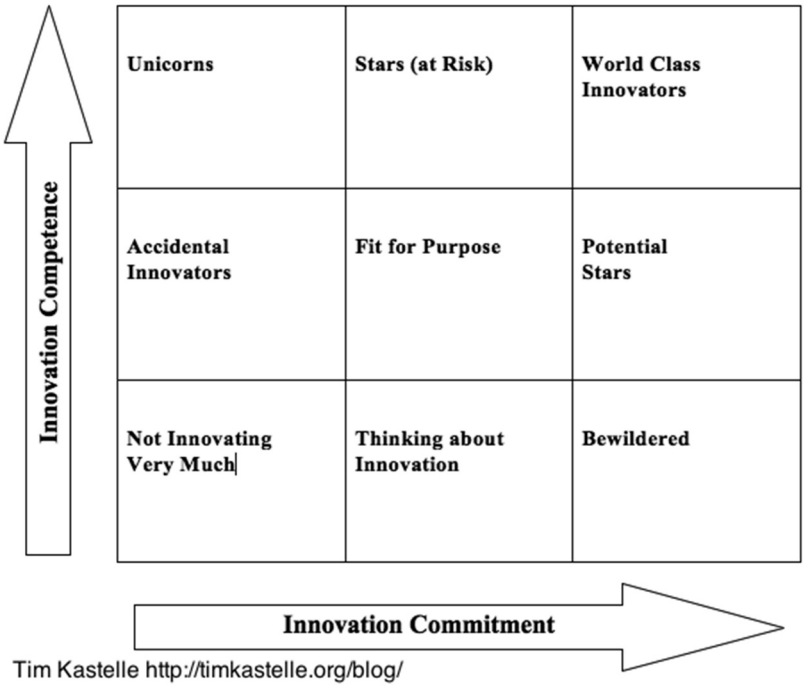

Figure 4. Innovation Matrix

Source: (Kastelle 2012)

Next tool is a self-evaluating questionnaire Boost your Innovation Potential used by Center for Research in Entrepreneurial Change and Innovative Strategies in Louvain (CRECIS, 2013) mainly for areas:

1. Shared strategic vision.
2. Entrepreneurial resources.
3. Proactive deal flow.
4. Balanced portfolio.
5. Nimble execution.
6. Overall achievement.

Each of the areas consists of several questions with traffic lights-like scaled answers. It is important to know weak positions coloured by red lights and to act in "green" directions.

The last example of tools in this group is about reasons why innovations are not successful, i.e. innovation potential barriers. The barriers acts against innovations and can decrease innovation potential. It can be done e.g. by formal declaration of pro-innovation activities. Cross (Cross, (http)) has recognized three main types of innovation barriers which he calls killers:

1. Strategic Killers – incremental goals, focusing resources on defending existing businesses at the cost of creating new income streams, and excessive and conflicting priorities.
2. Organisational Killers – unclear accountabilities, too many management layers, a reliance on small, internal R&D or equivalent teams for all innovation, and an over-reliance on planning
3. Attitudinal Killers – a desire for a magic pill solution (rather than a daily exercise regime), a belief that customers can simply tell you what new innovation they want (when, in fact, customers are poor at predicting their own future behaviour), a requirement to 'get it right first time, every time', and, most importantly an intolerance or fear of failure.

The barrier and their analysis can help to set criteria which can discover internal obstacles to innovation. The next step then should be any elimination of these killers measured by the set of criteria.

Sets of indicators from different more or less linked areas.

In human resources management, for example, the set of innovation potential indicators used by OPP (2013) measures basic areas of activities: motivation to change, challenging behaviour, adaptation, consistency of work styles, and social desirability. The set can give a picture about future competitiveness, ability to develop and to motivate employees and to select key people in an organization from innovation point of view as well as to

organize them to teams. According to the source, employees can be divided then to the groups: change agent, consolidator and catalyst.

Very simple approach how to count an innovation potential by a formula represents readiness to innovate (R) introduced by Monopoli (2013):

$$R = (W + I) \times O$$

The formula is explained for Work Environment (W) as organizational motivation, resources, and management practices. Individuals (I) consists of competencies, task motivations, and creative traits. Work environment and Individuals (W + I) represent creativity in an organization. System Openness (O) is about company's ability and functionality of communication with external environment. The Readiness to Innovate (R) is then a conjunction of creativity utilisation of employees and an ability of the organization to recognize internal weak signals and to join them with external threats.

Different models of financial stability with their indexes.

Different models of financial stability with their indexes, e.g. equity capital to borrowed capital, etc. The idea behind it is to examine and test the financial stability of a company after an innovation realisation, i.e. whether a company has enough working capital for realisation of an innovation. One of methods is in Sorescu, Chandy and Prabhu (2003) for radical innovations; a different approach is used by Bondareva (Bondereva, 2012, p. 117-128) testing amount of resources for functional continuation.

Maturity approach

The last mentioned method of innovation potential measurement by areas in this paper is maturity approach used firstly in project management and then in next areas, e.g. knowledge management. There are criteria to measure an ability of a company to realize a project of innovation, e.g PRINCE, OPM3, P3M3 etc.

As mentioned above, innovation management should increase income and profit. As it is mentioned by Balfanz (Balfanz, 2009), the best SME[2] companies were reaching approximately 12% operational margins, an exceptional performance, compared to the 5% operational margin of the average SME. According to the mentioned authors, SMEs were very good in installing some kind of structured management processes because it is vital for their business success. On the other hand, an average SME lacks skilled personnel to adapt and introduce new management processes. It is also

[2] SME = small and middle sized enterprises

mentioned that Innovation Management (IM) is not the first instrument being established in majority of cases. However their future depends on their ability to offer innovative products and services and the ability to innovate their business processes. Managing the entire process requires a clear innovation strategy, an organizational culture that supports innovation, and processes that ensure that the innovation ideas are developed adequately. The result of their research is Innovation Management (IM) approach and methodology in particular targeted to SMEs, called SLIM (SME-centric Lean Innovation Management) (Balfanz, 2009).

The research presented several obstacles to IM implementation. The author mentions mainly internal commitment because IM is seen as a parallel initiative to other management approaches. As a recommendation, it is better to implement IM as a supplement to existing strategy linked by IM indicators and business performance indicators. Preconditions for SMEs are (i) existence of a single person or a small team responsible for an innovation, and (ii) previous experience with strategic planning and processes because of targeting the early innovation phases. SLIM realizes the IM by organisational structures, roles, processes and documents (templates) adapted to company specific needs (Figure 5).

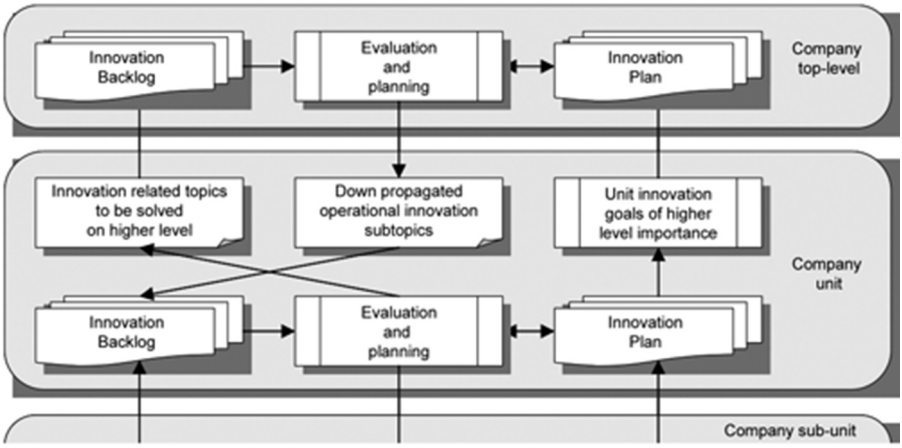

Figure 5. Main SLIM documents

Source: (Belfanz 2009)

It must be mentioned that there are several imaginations of future predictions. Linear trends are used in general. From this point of view is interesting work of Marketing2win (2012) which explains a vacuum effect of innovation potential with formula:

Potential of innovation = Capability – Utilization.

The innovation potential has exponential curve and exponential growth.

Summary

To know innovation potential can be helpful for companies. There are many approaches what and how to measure to get a picture more or less simply and precisely. We can summarize several points:

1. There are different areas for measurement:
   i. Organizational motivation: indicates committed to innovation and level of support for creativity and innovation,
   ii. Resources: people, funds, time and information available to support innovation efforts,
   iii. Management practices: goals, feedback, reward, creativity, the management style, innovation killers (it is enough to mention just dogmatic, conservative, directive management).
2. Usually it is not enough to get information about the innovation potential from one area only, but there is presented a struggle between complexity and ability to realize and summarize results from different areas and methods. The future is seen in research of this field and looking for different more complex approaches and methods.
3. There is a significant effort not to measure a present status, but an attempt to make prognosis of innovation impacts to a company. This effort is mostly visible in finance.
4. Even for imperfections in measurement of innovation potentials today, it still useful to get even an approximative picture of own latent excellence in future.

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THE "COSMOB QUALITAS PRAEMIUM": A QUALITY BRAND IN THE ITALIAN FURNITURE SECTOR

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Introduction

In recent years, attention by enterprises towards environmental issues is increased, taking on a strategic role in the activity of the same.

The quality environmental standards are higher.

The "Green Economy" theme has become a central topic of economic and social debate and many companies use it to improve their competitive performance. In Italy, for example, from 2008 to 2013, already 328,000 companies have invested in green technologies to reduce their environmental impact (GreenItaly Rapporto 2013).

Moreover, the consumer often wants to have certainty on the environmental commitment of the company or the environmental performance of the product he is about to buy (Sammer & Wustenhagen 2006).

In many industries and for many products there is some confidential information to the customer, e.g.:

- when you buy a bottled or packaged food you have all the information about the substances they contain;
- when you buy meat from a butcher, you know the provenance of the same;
- when you buy a book you know if recycled or not recycled paper has been used for it;
- when you buy an appliance, you have all the information about the disposal.

In the wood-furniture sector, this information on the environmental quality of the product is not explicitly defined and the consumer is unable to perceive the commitment of the company or the environmental quality of the product.

Many companies, therefore, occur to evaluations by independent bodies for ensuring environmental excellence through mechanisms to monitor, control and certification. This allows guaranteeing the consumer for a product actually more sustainable, or rewarding a company that is more sensitive to environmental issues.

There are two forms of environmental certification:

- certification of a product or service offered on the market (Ecological Brands, Environmental Claims, Environmental Product Declarations);
- certification of an organization, i.e., of its activities and its processes (ISO14001, EMAS).

The difference is that, in the second case, a firm certifies all assets under its management or control "all activities undertaken by the organization itself or by a person acting on its", then, on a general level (Kerry Turner, Pearce & Bateman 2002); while, in the first case, a firm certifies the single product line viewed in the whole of its life cycle from the "birth" (e.g., the supply of wood) to the "death" (the disposal or recovery).

All forms of environmental certification, regardless of type, are based on:

- standardization of systems, namely the establishment of requirements for certification and for maintenance of the same;
- the use of independent third parties to request a verification of compliance;
- accreditation of such third parties.

In the past two decades, the International Organization for Standardization (ISO) has promoted the development and the use of standards and certification aimed at providing consumers with more information on the environmental impact of the product. ISO has allowed them a choice more informed about the product or service (Cianciullo & Silvestrini 2010).

In particular, the ISO 14020 focuses on communication to the client's compliance with certain environmental requirements, guaranteed by the certification.

The different forms of communication are called "environmental claims". These, regardless of the form, must be:

- verifiable, accurate, considerable and not misleading;
- based on scientific methods, thus enabling accurate and reproducible results (the results must follow one another succession and don't occur only once);
- consider all aspects of the life cycle of the product.

It should be noted that all the certifications relate to voluntary standardization systems and are voluntarily adopted by organizations and non-coercively imposed by law.

Some types of environmental product certification may be indicated directly on the product or packaging (primary), while others in accompanying advertising or public statements (Frey 1995).

The different forms of "environmental claims" and related forms of certification are divided into three categories, each regulated by a specific reference standard.

The TYPE 1 labels (Ecological Mark) are voluntary brands, based on a system that considers all the environmental impacts of a product and its life cycle (such as the European eco-label).

The TYPE 2 labels (Environmental Claims) are self-environmental statements by manufacturers, importers or distributors of products related to a feature of the same (such as recyclable, biodegradable, etc...).

The TYPE 3 labels (Environmental Product Declarations) are Eco-profiles or Environmental Product Declarations, reporting statements based on established parameters and quantifying (give a measure) impact associated with the life cycle of the product.

In this paper the authors analyse a tool to guarantee the consumer for the environmental quality of the product in the wood-furniture sector: the COSMOB QUALITAS PRAEMIUM (CQP).

The CQP brand is a TYPE 1 label created in 2008 by the “CONSORZIO DEL MOBILE”, well known as COSMOB S.P.A., which is a joint-venture company, situated in the Province of the Pesaro-Urbino.

COSMOB is a non-profit organization and its main purpose is to provide technology solutions and services in the fields of quality, research and innovation for companies in the wood and furniture industry.

These services can be summarized in:

- technological research and innovation transfer;
- research and support for the promotion of commercial and sales activities;
- promotion and development of the professional and managerial training;
- technological development and promotion of internationalization.

The activity of COSMOB is focused on a range of specific directions:

- activity of innovation;
- activity of training;
- activity of auditing;

- activity of internationalization;
- technical activity of laboratory.

The activity of innovation is carried out through technological research and development of market analysis including participation in projects of international interest and collaboration with networks of research, development and cooperation at international level (Enterprise Europe Network, Innovawood, Brazilian Network Technology Services).

The activity of training is realized by providing advice aimed at managers and technicians, but also by a special master in "product design" made by COSMOB.

The activity of auditing is carried out through the brand "CQP" but also offering the possibility to businesses and customers to support the implementation of an Environmental Management System.

As regards the activity of internationalization, COSMOB promotes companies which approach to a path of internationalization or which would like to penetrate new markets, providing services both in terms of information and in terms of the organization. COSMOB, therefore, with a focused approach to specific countries of interest, offers a service on:

- in-depth analysis of the foreign market, highlighting the benefits, risks, opportunities, competition and analysis of distribution structures;
- planning a penetration strategy in the foreign market, which not only takes into account direct export, but also forms of cooperation with local actors through partnerships, joint ventures, transfer of know-how and licenses;
- enabling collaborative relationships with promotion companies and brokerage business firmly rooted in the foreign country.

The last activity represents the core activity of COSMOB. Through its laboratory, observing the standard UNI EN ISO/IEC 17025:2005, COSMOB carries out test for enterprises in order to issue a certification such as Eco-label, Carbon Footprint and LEED. Moreover, it carries out tests to establish the observance of American requirements (CARB), French requirements ("émissions dans l'air intérieur") and Japanese requirements (building standard law on sick houses).

The COSMOB QUALITAS PRAEMIUM brand

The "CQP" is a brand recognized by COSMOB to all organizations that prove the development of an effective production system. This system must

be able to ensure that the products have been manufactured in the respect of requirements specified by COSMOB.

The benefits achieved by a certified organization are both commercial and technical. Commercial benefits are connected with opportunity to use CQP as a communication tool in order to show the environmental commitment of the company and to reach customers interested in green products with a low environmental impact. An eco-label, in fact, allows companies to enjoy a major strength against competitors, as evidenced by the presence of specialized skills, obtained through education/counselling by the staff of COSMOB, as well as a code of values that competitors often cannot boast. Therefore a good quality product may build customer loyalty and generate a competitive advantage that can last over time (Masi & Rubino 2010).

Technical benefits derive from the periodical controls of COSMOB. Actually, COSMOB carries out periodical controls to monitor the production activity of the firm and in addiction this firm learn new things from spill-over generated during the interaction with the technicians of COSMOB.

CQP brand allows, on one hand, to monitor and improve the production efficiency thanks to the identification of waste and optimizing the use of resources, as well as through a mutual learning process due to the interaction with the technicians. On the other hand, this brand can be used as a tool for marketing and communication in order to improve the firm image, but also it can take parts in the creation of a competitive advantage against competitors.

The certification procedure is necessary to gain the benefits of CQP brand. This process follows the submission of the certification request from a business and it is composed by seven steps:

1. *initial testing visit.* After receiving the certification request, COSMOB analyses this request and decides its acceptance or rejection. If the response is positive, COSMOB will organize an initial testing visit, that is an audit made by the technicians of COSMOB in order to establish the presence of minimum requested elements necessary to issue the brand;
2. *technical training.* In this phase is carried out a training course dedicated to the commercial and technical employees of the company, in order to ensure proper preparation of the staff both from a commercial point of view (and therefore the ability to enhance the possession of this tool) and from a technical point of view (how to monitor and "monitor" the production or design more efficiently);
3. *sampling.* The organization provides COSMOB a sample of the products concerned to carry out the laboratory tests. This initial sample must be representative of the production, and then the products made in the same production cycle should not be included. A good way to ensure this requirement is to include products from no fewer than three dates of manufacture, each separated by at least a week;

4. *laboratory tests.* The technicians of COSMOB test received samples with the aim to prove the accordance with COSMOB standards;
5. *data analysis*. If the sample test gives a negative result, COSMOB will write a detailed report where defects and non-conformities are analysed. It will help the technical office of the organization to identify and eliminate the non-conformities causes. Conversely, if results of test and initial testing visit are positive, COSMOB will issue the CQP brand;
6. *marketing support.* COSMOB undertakes to provide certified firms with a set of tools to facilitate communication and marketing activities, to enhance the brand achievement and to include it in a system of promotion instruments in order to increase its visibility. Furthermore, COSMOB provides the personnel of these firms with a set of tools to facilitate the understanding of the certification procedure. These tools are, e.g., workshop for sellers and technical reports;
7. *monitoring.* The company continues to maintain its internal controls by sending COSMOB production samples for testing in the laboratory.

Every 6 months COSMOB carries out a technical-managerial audit in order to check the preservation of the minimum requirements necessary for the CQP brand renewal; while the certification has duration of 36 months.

The CQP brand has a different certification procedure depending on which aspect (technical or managerial) a client enterprise wants to "keep under control" and certify, i.e. supply chain, indoor hi-quality, formaldehyde. Each type of CQP has specific rules and regulations elaborated by COSMOB.

CQP: use and diffusion. Results and discussion

Nowadays COSMOB has granted 11 CQP brands divided in the different types and the firm certified are 9.

Firms with the CQP brand are mostly organizations situated in the Province of Pesaro-Urbino, while 1 is in Ancona and 1 in the Province of Turin.

Since 2008, COSMOB has issued 18 grants of this brand to 15 organizations (see Table 1).

Nevertheless, since 2011, the number of certified firms is declined and in addition the number of suspensions/interruptions is increased (see Table 1).

This trend can be attributed to a number of reasons.

The first may be the economic difficulties of these years that have forced firms to reduce their non-strategic investments in order to control their costs. As the certification process lead to advantages, also it involves the incurrence of costs. An organization in trouble, in the first place, eliminates the costs

associated with strategic activities not directly. We can cite, e.g., the "Del Tongo Industry SPA", certified by the trademark "CQP- Formaldehyde" from 08/04/2010 to 07/04/2013 that has decided to suspend the procedure. The Del Tongo, although a historical firm in Italian furniture industry, is currently in a state of severe crisis, using the instrument of layoff more than 200 workers. The reason for this crisis is linked to a bad investment abroad, specifically in Libya, where the company had awarded important contracts for the supply of complete furnishings. The collapse of the Gaddafi regime has cut off supplies, sending the contract division of business in crisis.

Table 1. Firms certified by COSMOB

YEAR	NUMBER OF CERTIFIED FIRMS	NUMBER OF CERTIFICATION SUSPENDED
2008	1	0
2009	1	0
2010	7	0
2011	4	1
2012	4	1
2013	1	5
TOTAL	**18**	**8**

Source: authors

The second reason, which is connected to the difficult climate, it is the failure of some major client organizations, as BECA Ltd, SCA Tamburati S.R.L. and Annovati, Trombini Group S.P.A.

The third reason is the profile of the organizations. In fact, if we make an analysis of the companies using this tool, we can see how these provide a medium-high service often by implementing a strategy of value creation. So they are organizations which have strong internal managerial skills, medium-high performances and high social responsibility. Companies are environmentally conscious and use quality tool. Almost all of them have implemented an internal quality management system or an integrated management system that takes full account of environmental, quality and safety (Perrini &Tencati 2008). They are, therefore, medium-sized companies

with a solid capital, managerial and organizational structure, a limited number of companies with respect to the majority.

It is interesting to note that 9 organizations currently certified by CQP brand, are supported by other brands and certifications and 7 organizations have implemented a Quality Management System.

Specifically:

- Morfeus S.P.A. Tavoleto (PU): UNI EN ISO 9001/94 (Quality Management System) - Mark "CQP - Mattress Low Emission" - Mark "Consortium Mattress Manufacturers of Quality" - Mark "Made in Italy". Range: Medium- High;
- Scavolini S.P.A. Montelabbate (PU): Integrated Environment, Quality and Safety, through the UNI EN ISO 9001/2008 (Vision 2000), ISO 14001/2004 (Environmental Management System), OHSAS 18001/2007 (Safety Management System and Occupational Health) - Mark "CQP Indoor- Hi Quality" which also certifies the credit IEQ4.5 of the LEED certification system. Company Leed Complainer. This firm has strong attention to the environment and sustainability through personal initiatives. From several years, it uses only energy from renewable sources by means of two photovoltaic systems that enable it to achieve almost complete energy independence (90% approximately). In addition, in order to reduce emissions into atmosphere, using, for heating, a biomass consisting of wood shavings virgin. Then thanks to a careful collection, the company recovers 90% of the amount of waste produced from its activities, using them in new production processes or using them to get energy. In 2008, Scavolini has received the MERIT Award, a prestigious award given by Société Générale de Surveillance (SGS) to companies that are particularly involved from the point of view of quality control, safety, environment and social responsibility. Range: Medium- High;
- Sailmaker International S.P.A. Numana (AN): Mark "Confidence in Textile"- Mark "Blue Sign" - Mark "FPA - Textile" - OEKO -Tex-Standard UNI 9175 Class I. Range: High;
- Fratelli Del Prete Prefabricated S.A.S. Pesaro (PU): UNI EN ISO 9001/2008- Mark "FPA - Formaldehyde" - This is a Business to Business Company in carpentry. Range: Medium;
- FAB S.R.L. Petriano (PU): Integrated Environment, Quality and Safety, through the UNI EN ISO 9001/2008 (Vision 2000), ISO 14001/2004 (Environmental Management System), OHSAS 18001/2007 (Safety Management System and Occupational Health) - FSC and PEFC certification for custody chain- Mark “CQP - Process Control" - REHAU certification of "excellence edging laser”. The company has a strong focus on the environment and sustainability, through personal initiatives, such

as the use of renewable energy by an investment in photovoltaic panels, use of low energy lighting, and strong recovery of chipboard as a source heat. This is a Business to Business Company that manufactures parts for furniture (doors, profiles, bars, etc...). Range: Medium-High;

- Las S.R.L. Tortoreto (TE): Integrated Environment, Safety and Quality, through the UNI EN ISO 9001/2008 (Vision 2000), ISO 14001/2004 (Environmental Management System), OHSAS 18001/2007 (Safety Management System and Occupational Health). FSC certification for custody chain. SA 8000/2008 (Corporate Social Responsibility). Brand "CQP - Formaldehyde". Company LEED Complainer. This company has a strong focus on the environment and sustainability, through personal initiatives such as the Office for Nature project for the creation of a sustainable future. Range: Medium- High;
- Ernestomeda Montelabbate (PU): Integrated Environment, Quality and Occupational Health and Safety Assessment through the UNI EN ISO 9001/2008 (Vision 2000), ISO 14001/2004 (Environmental Management System), OHSAS 18001/2007 (Safety Management System and Occupational Health). These three systems were certified by SGS. Mark "CQP - Indoor Hi -Quality" which also certifies the credit IEQ4.5 of the LEED certification system. Company LEED Complainer. This company has a strong focus on the environment and sustainability, through initiatives such as the personal project ENVIRONMENT, the use of renewable energy projects for the protection of forest areas, adoption of eco-friendly and water-repellent panel IDROLEB for the structure of cuisines made with 100% post-consumer FSC certified wood. In the website of the firm there is some information for the consumer regarding the disposal/recovery of the product and the supplementary actions to be taken in order to have a sustainable attitude in his own kitchen. Range: Medium- High;
- Moretti S.P.A. Lunano (PU): ISO14001/2004 (Environmental Management System) - Mark "Made in Italy" - Mark "CQP - Process Control" - Mark "CQP - Emission A +" - Mark "CQP -Indoor Hi -Quality" which also certifies the credit IEQ4.5 of the LEED certification system. Company LEED Complainer. This company has a strong focus on the environment and sustainability, through personal initiatives such as the adoption of the LEB panel (the latest evolution of recycled panel with the lowest formaldehyde emissions in the world, with five times smaller rates than those required in the European level and even lower than the Japanese standard, considered the most severe). All the customer communication is based on environment and the firm has adopted a differentiation strategy based on respect for the environment. Range: Medium- High;

- Pantarei S.R.L. Urbino (PU): Mark "CQP - Process Control".

A fourth reason to explain the trend of the concessions of the CQP brand is the presence of strong competitors.

The CATAS Quality Award (CQA) brand is a voluntary eco-label competitor brand. The CQA brand is currently the market leader, counting 114 certifications on a total of 40 companies or groups of companies. The stronger competitive position of CATAS is explained by:

- the oldest market presence. CQA, created in 1969, has developed its own certification protocol with an independent brand since 1993, 15 years before COSMOB. So it has enjoyed for this time of a monopoly position with regard to the voluntary certification in the wood and furniture industry. This period has allowed it to gain the benefits from "first mover" creating loyalty and stable relationships with important Italian and foreign groups (Kerry Turner, Pearce & Bateman 2002);
- a locational advantage. Having two factories, one in the province of Udine and the other one in Lissone (Brianza), it is easily the benchmark for organizations of Northern Italy, where it is obviously cheaper but also more comfortable and practical interface with an organization that has a greater geographic proximity;
- collaboration with important corporations (Gruppo Frati, IKEA, etc...). The interaction of CATAS with these groups may affect the suppliers of the same. IKEA, e.g., requires suppliers to comply with certain requirements identified by an internal standard and tests must be performed by a single reference laboratory, in order to be compared more easily.

Conclusions

The "CQP" brand is one of the few voluntary eco-labels in Italy, along with the "CQA" brand, the market leader. Although the CQP brand presents lower results than the CQA brand, these are linked to a lower age of the brand so that it is less time on the market, as well as aspects related to the geographical location and the difficulty in entering inside a collaboration system already heavily tested. Despite this, the CQP brand is the reference point for companies in the furniture district of Pesaro and Urbino. Using this brand, local companies can certify and demonstrate their commitment and their attention to certain aspects of the production process of their product/service. It is also an important competitive tool for businesses, generating a steady increase in type kaizen quality levels of the organizations that request them (Mancusio & Morabito 2012), thanks to the side-lines of consulting and training for employees and managers and to the knowledge

spill overs generated by the interaction with the staff of COSMOB. So we suppose that CQP brand could be an important tool for organizations. It is necessary a better communication about its added value and its features, such as marketing support that is given from the staff of COSMOB.

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THE ASSESSMENT OF KNOWLEDGE OF THE ISO 10000 STANDARDS BY ORGANISATIONS THAT USE A QUALITY MANAGEMENT SYSTEM

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Introduction

The International Organization for Standardization ISO issued the ISO 10000 series of standards to support the ISO 9000 family of quality management standards. These standards explain in more details some crucial items especially those included in ISO 9001 used for certification of quality management systems.

Its main objectives are providing the business environment with most important guidelines for achieving consistently high quality of services and products. The most important task of the ISO 10000 family of quality standards is to improve the effectiveness of organisation's quality management. The more effective quality management, the more noticeable benefits from its application, consisting in (http://www.eurocert.org.uk access: 25.04.2014):

- more effective use of resources,
- better risk management, and
- improved customer satisfaction due to consistent supply of expected services and products.

It should be noted that among all ISO 9000 series of standards, including:

– ISO 9000:2005; *Quality management systems – Fundamentals and vocabulary,*
– ISO 9001:2008; *Quality management systems – Requirements*;
– ISO 9004:2009; *Managing for the sustained success of an organization – A quality management approach* i ewentualnie
– ISO 19011:2011; *Guidelines for management systems auditing,*

ISO 9001 contains the requirements that when fulfilled are sufficient for getting certificate by an organisation. In other words, the organisation must not use or even know of other standards of this series comprising detailed guidelines. Furthermore, the organisation must not know of the ISO 10000 family of quality standards often referred to as "circum-system" standards.

Thus, a question has arisen to what extent the ISO 10000 family of standards is needful for organisations that have implemented a system consistent with the ISO 9001 standard requirements. The aim of this paper is to present the ISO 10000 series of standards and results of research related to knowledge and application of them by companies that implemented a quality management system in Poland.

ISO 10000 series of standards

The ISO 10000 family of quality standards are presented in Table 1.

Table 1. ISO 10000 Standards

International Standard		Polish Standard
ISO 10001:2007	Quality management - Customer satisfaction – Guidelines for codes of conduct for organizations	PN-ISO 10001:2009
ISO 10002:2004	Quality management – Customer satisfaction – Guidelines for complaints handling in organizations	PN-ISO 10002:2006
ISO 10003:2007	Quality management – Customer satisfaction – Guidelines for dispute resolution external to organization	PN-ISO 10003:2009
ISO 10004: 2012	Quality management – Customer satisfaction – Guidelines for monitoring and measuring	---
ISO 10005:2005	Quality management systems – Guidelines for quality plans	PN-ISO 10005:2007
ISO 10006:2003	Quality management systems – Guidelines for quality management in projects	PN-ISO 10006:2005
ISO 10007:2003	Quality management systems – Guidelines for configuration management	PN-ISO 10007:2005
ISO 10008:2013	Quality management – Customer satisfaction – Guidelines for business-to-consumer electronic commerce transactions	---
ISO 10012:2003	Measurement management systems – Requirements for measurement processes and measuring equipment	PN-EN ISO 10012:2004
ISO/TR 10013:2001	Guidelines for quality management system documentation	PN-ISO/TR 10013:2002
ISO 10014:2006	Quality management – Guidelines for realizing financial and economic benefits	PN-ISO 10014:2008
ISO 10015:1999	Quality management – Guidelines for training	PN-ISO 10015:2004
ISO/TR 10017:2003	Guidance on statistical techniques for ISO 9001:2000	PKN-ISO/TR 10017:2005
ISO 10018:2012	Quality management – Guidelines on people involvement and competence	---
ISO 10019:2005	Guidelines for selection of quality management system consultants and use of their services	PN-ISO 10019:2006

Source: own adaptation on the base: http://www.iso.org/iso/home/store/catalogue_tc (access 25.04.2014), http://www.pkn.pl/ (access 25.04.2014)

Material and methods

There was a study carried out at 40 organisations. There were entities of various size, including 13 small (32.5%), 14 medium (35%) and 13 large sized (32.5%) businesses. These organisations have been selected to represent different business areas. All the organisations use a quality management system conforming to ISO 9001:2008; *Quality management systems – Requirements*, and some of them use also systems managing other fields of activity, namely:

- ISO 14001:2004; *Environmental management systems – Requirements with guidance for use*
- ISO 22000:2005; *Food safety management systems – Requirements for organizations throughout the food chain*
- PN-N-18001:2004; *Occupational Health and Safety Management Systems – Requirements*
- HACCP – *Hazard Analysis and Critical Control Point*
- OHSAS 18001:2007; *Occupational Health and Safety Management Systems – Requirements*
- ISO/IEC 27001:2013; *Information technology – Security techniques – Information security management systems – Requirements*
- AQAP 2110 (Edition 3):2009; *NATO Quality Assurance. Requirements for design, development and production* (AQAP – *Allied Quality Assurance Publication* – standardization publications by each NATO member countries. A set of quality requirements implemented typically at companies supplying the armies (the military equivalent of ISO 9001).

Information on organisations participating in this research is presented in Table 2. It should be noted that this includes at least several companies leading in their field of activity.

In research telephone polling was used, where respondents were asked to answer the questions related to the knowledge of fifteen standards of the ISO 10000 series. The suggested answers included:

- I have never heard of such standard,
- I know such standard has been implemented, but I do not know it,
- I know this standard, but I do not use it,
- I know this standard and use it.

Also more comprehensive answers were allowed in the form of comments.

The respondents were management representatives responsible for the system, thus persons that should have a good knowledge of system and supporting standards.

Table 2. Organizations under analyse

No.	Organisation size[1]	Field of activity	NACE code[2] (ver. 2)[3]	Systems used Organisation No.
1.	Medium	Plant raising and animal breeding	01.1, 01.3-01.6	ISO 9001, ISO 14001, ISO 22000
2.	Large	Hard coal mining	5.1	ISO 9001, ISO 14001, PN-N-18001
3.	Medium	Production and sale of meat and meat poultry products	10.1	ISO 9001, ISO 14001, HACCP
4.	Medium	Production and sale of meat and meat products	10.1	ISO 9001, HACCP
5.	Medium	Fruit and vegetable processing	10.3	ISO 9001, ISO 14001, HACCP
6.	Small	Design and production of paper packaging for top chocolate product manufacturers	17.2	ISO 9001, ISO 14001, HACCP
7.	Small	Manufacture and sale of rubber compounds and products	22.1	ISO 9001
8.	Medium	Modification of plastics and production of plastic pipes	22.2	ISO 9001, ISO 14001
9.	Medium	Production of plastic films, plates and packaging	22.2	ISO 9001, ISO 14001
10.	Medium	Production of foamed polystyrene	22.2	ISO 9001
11.	Large	Design and production of plastic housings for domestic appliances	22.2	ISO 9001, ISO 14001
12.	Large	Design and production of glass and glass and glassware	23.1	ISO 9001, ISO 14001
13.	Large	Design and production of glass and glassware	23.1	ISO 9001, ISO 14001
14.	Large	Production and sale of wall and floor ceramic tiles and decorations	23.3	ISO 9001, ISO 14001, PN-N-18001,OHSAS 18001
15.	Large	Iron foundry	24.5	ISO 9001, ISO 14001
16.	Large	Production of metal sheet packaging	25.9	ISO 9001, ISO 14001, OHSAS 18001, HACCP
17.	Medium	Manufacture and sale of computers and peripheral equipment, computer programming	26.2, 47.4, 62.01	ISO 9001, ISO 14001, ISO 27001

18.	Large	Design, production, sale and service of large size domestic appliances	27.5	ISO 9001, ISO 14001
19.	Large	Production of furniture	31.0	ISO 9001, ISO 14001
20.	Large	Electricity and steam production and supply	35.1, 35.3	ISO 9001, ISO 14001, PN-N-18001
21.	Medium	Sewage treatment plant, water supply	36, 37	ISO 9001, ISO 14001
22.	Small	Energetic ash processing	38	ISO 9001, ISO 14001
23.	Medium	Photographic waste management	38.2, 38.3	ISO 9001, ISO 14001
24.	Large	Holding and investment Project for building and engineering	42.1	ISO 9001, ISO 14001, PN-N 18001, AQAP 2110
25.	Small	Sale of motor vehicles	45.1	ISO 9001, ISO 14001
26.	Large	Sale of office articles	46, 47	ISO 9001, ISO 14001
27.	Small	Sale of machine tools	46.6, 47.7	ISO 9001
28.	Medium	Passenger land transport	49.3	ISO 9001
29.	Small	Hotel	55.1	ISO 9001
30.	Small	Restaurant	56.1	ISO 9001, HACCP
31.	Medium	Publishing books, periodicals and magazines	58.1	ISO 9001
32.	Large	Financial service activities	64.1	ISO 9001
33.	Small	Architecture office	71.1	ISO 9001
34.	Small	Environmental Research Laboratory	71.2	ISO 9001
35.	Small	Advertising agency	73.1	ISO 9001
36.	Small	Property protection agency	80.1	ISO 9001
37.	Small	Indoor cleaning	81.2	ISO 9001
38.	Medium	Fire Service HQ	84.2	ISO 9001
39.	Small	Lower secondary school	85.3	ISO 9001
40.	Medium	Hospital	86.1	ISO 9001

1 According to: Commission Recommendation on 6 May 2003 concerning the definition of micro, small and medium-sized enterprises, Official Journal of the European Union, L 124/36, 20.5.2003.

2 NACE – Nomenclature statistique des Activités économiques dans la Communauté Européenne – Statistical classification of economic activities in the European Community.

3 According to: Regulation (EC) No 1893/2006 of the European Parliament and of the Council of 20 December 2006, establishing the statistical classification of economic activities NACE Revision 2 and amending Council Regulation (EEC) No3037/90 as well as certain EC Regulations on specific statistical domains, Official Journal of the European Union, L 393/1, 30.12.2006.

Results and discussion

The results of knowledge of the ISO 10000 series are presented in Table 3.

Firstly, the research carried out indicates that relatively large number of organisations has no awareness of the existence of the ISO 10000 series of standards. This follows from 274 answers, i.e. approx. 46% of all analyzed cases (600 answers) listed in Table 2.

When considering this aspect in the terms of organisation size it should be noted that the worst situation occurs in small-sized enterprises that in approx. 68% do not realize the existence of such standards (133 cases of 195 possibilities). The situation is only slightly better among medium-sized organisations that up to about 52% do not know that the subject standards exist (109 cases of 210 possibilities). However among large enterprises only 18 such cases were reported, i.e. approx. 9% of all respondents. While analysing the cause of such situation one may presume that the better knowledge of the ISO 10000 series of standards in large organisations results from the fact that a large number of employees and sometimes even whole departments deal with the quality and system management issues. New management methods, tools and solution are being developed and implemented and any implementation suggestion and facilitation such as standards are welcomed. The presented enterprises have implemented two or more management systems. They can supplement such integrated systems with other components. It should be noted that four of large organisations belong to global corporations. Their management systems include some items taken also from various standards, including the ISO 10000 series. However, in small-sized enterprises the persons engaged in system management must perform such work along with other mandatory responsibilities, thus being pressed by lack of time.

In addition, it should be noted that the number of standard unawareness cases (274) is considerably higher than those of awareness (173), thus being probably the result of improper information about standards and related benefits. During interviews with organisation representatives who did not know the ISO 10000 series of standards, another important question was pointed out, namely the fact that these standards are not referred to the basic system standards: ISO 9000, ISO 9001 and ISO 9004.

An analysis specifying the knowledge of individual standards of the ISO 10000 series by enterprises under examination is presented in Figure 1.

Table 3. Respondents answers related to their knowledge on ISO 10000 Standards

No. of organization	ISO 10001:2007	ISO 10002:2004	ISO 10003:2007	ISO 10004: 2012	ISO 10005:2005	ISO 10006:2003	ISO 10007:2003	ISO 10008:2013	ISO 10012:2003	ISO/TR 10013:2001	ISO 10014:2006	ISO 10015:1999	ISO/TR 10017:2003	ISO 10018:2012	ISO 10019:2005
1.	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
2.	●	●●	●●	●●	●●	●●●	●●	○	●●●	●●●	●●●	●●	●●●	○	●●
3.	●●	●	●	○	●	●	●	○	●	●●●	●	●	●	○	●
4.	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
5.	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
6.	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
7.	●	●	●	○	●	●	●	○	●	●	●	●	●	○	●
8.	●●	●●	●●	○	●●	●●	●●	○	●●	●●	●●	●●	●●	○	●●
9.	●●	●●	●	○	●	●	●	○	●●	●●●	●●	●	●●	○	●
10.	●	●	●	○	○	○	○	○	●●	○	○	○	○	○	○
11.	●●	●●	●●●	○	●●	●●●	●	○	●●	●●	●●	●●	●●	○	●●
12.	●●	●●	●●	●●●	●[1]	●[1]	●●	●	●●●	●●●	●●●	●●	●●	○	●●
13.	●	●	●	○	●	●	●	○	●	●	●	●	●	○	●
14.	●●	●●	●●	●●●	●●	●●	●●	●●	●●●	●●●	●●●	●●	●●	●●	●●
15.	●	●●	●	●●●	●●	●●●	●	○	●●●	●●●	●●	●	●	○	○
16.	●●	●●	●	●●●	●●●	●●●	●●	●	●●●	●●●	●●●	●●	●●	●●	●●
17.	●●●	●	●	●	●	●[1]	●	○	●●	●●●	●●	●	●	○	●
18.	●●●	●●●	●●	●●●	●●●	●●	●●	●●	●●●	●●	●●	●●	●●	●●●	●●
19.	●	●	●	●●	●	●	●	○	●●●	●●●	●	●	●●●	○	●
20.	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
21.	○	○	○	○	○	○	○	○	●●	●●	○	○	○	○	○

Table 3. cd.

No. of organization	ISO 10001:2007	ISO 10002:2004	ISO 10003:2007	ISO 10004: 2012	ISO 10005:2005	ISO 10006:2003	ISO 10007:2003	ISO 10008:2013	ISO 10012:2003	ISO/TR 10013:2001	ISO 10014:2006	ISO 10015:1999	ISO/TR 10017:2003	ISO 10018:2012	ISO 10019:2005
22.	●	●●	●	○	●	●	●	○	●●●	●●	●	●	●●●	○	●
23.	●	●	○	○	●	○	○	○	●●	●●●	●	●	●	○	●
24.	●●●	●●	●●	●●●	●●●	●●●	●●●	○	●●	●●	●●●	●●	●●	●	●
25.	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
26.	●●●	●●●	●●	●	●●	●●	●●	●●	●●	●●	●●	●	●●	●●	●
27.	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
28.	○	○	○	○	●●	●●	●●	○	○	●●●	●●	○	○	○	○
29.	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
30.	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
31.	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
32.	●●●	●●●	●●●	●●	●●	●[1]	●[1]	●●	●	●	●●	●●●	○	○	○
33.	●	●	●	○	●	●	●	○	●	●●●	●	●	●	○	●
34.	●	●	●	○	●	●	●	○	●●●	●●	●	●	●	○	●
35.	●	●	●	○	●	●	●	○	●	●●●	●●	●	●	○	●
36.	○	○	○	○	●●	●●●	○	○	○	○	○	○	○	○	○
37.	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
38.	○	○	○	○	○	●●●	●●●	○	○	○	○	○	○	○	○
39.	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
40.	○	○	○	○	○	○	○	○	○	●●●	○	○	○	○	○

where: ○ – I have never heard of such standard, ● - I know such standard has been implemented, but I do not know it, ●● - I know this standard, but I do not use it, ●●● - I know this standard and use it;
[1] In their opinion , the methods and manners they used are better than those proposed at standards

Source: own research

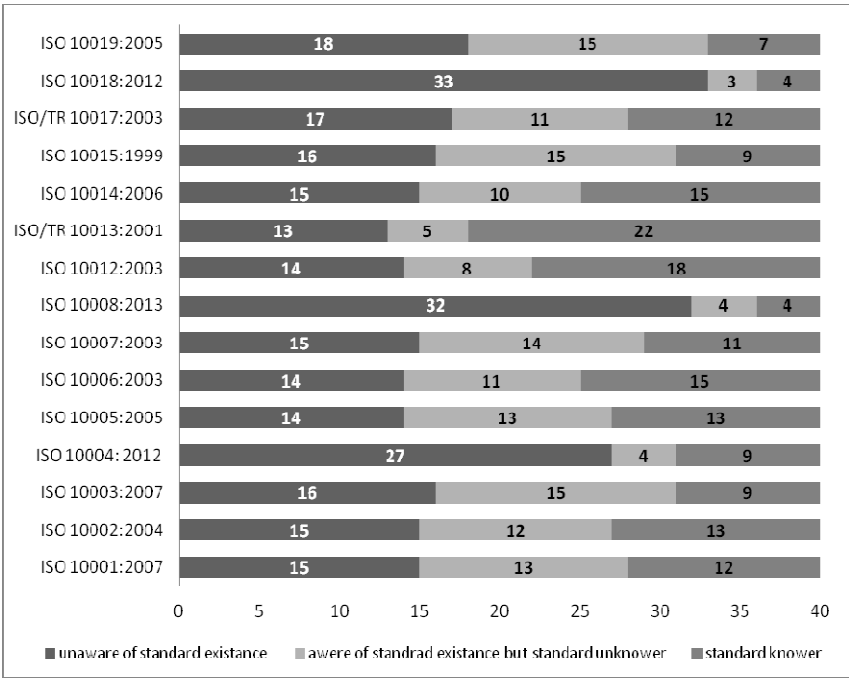

Figure 1. The knowledge of individual standards of the ISO 10000 series by the organizations under examination

Source: own research

Among the ISO 10000 family of standards the best known standard is ISO/TR 10013, as indicated by 67.5% of examined organisations (Figure 1). The representatives under pooling indicated that this standard was used at the system implementation stage only. Slightly less common was the ISO 10012 standard known by 26 among 40 enterprises, i.e. 65% of the whole. Generally, there were organisations engaged mainly in measuring activities and/or possessing a comprehensive research instrumentation. However, the standards ISO 10004, 10008 and 10018 are known only sporadically. It should be emphasized that these standards were published quite recently and have been not translated into Polish yet. The vast majority of organisations has awareness of them. In talks the respondents were surprised to hear questions about these standards as they have not been listed at the PKN (Polish Standardization Committee) website (www.pkn.pl; access: 30.04.2014).

Another question to be pointed out is the fact that organisations under examination poorly use the ISO 10000 series of standards. As results from respondent's answers (Table 2) in 35% cases the known standards were used (61 answers confirming the use of standards among 173 answers confirming that the standards are known). While considering all possible cases (600 answers) one may conclude that the use of the ISO 10000 series of standards

was declared by about 10% of respondents. It is difficult to judge whether this is large or small amount. When we consider it to be large, we can suspect that the most important factor causing poor spreading of these standards is low awareness of its existence. In contrast, when assuming this amount to be small, it is possible that these standards do not meet expectations.

It should be emphasized that the most commonly used standards of this series, as shown in Figure 2, is ISO/TR 10013, used by 35% of organisations under consideration. In turn, the two standards of the ISO 10000 series, namely ISO 10019 and 10008 are used not at all. On the other hand it should be noted that the representatives of three organisations claimed that some standards of the ISO10000 series (ISO 10005, ISO 10006 and ISO 1007) deal with the problems too narrowly or superficially and the procedures and methods employed by organisations are better that those proposed by these standards.

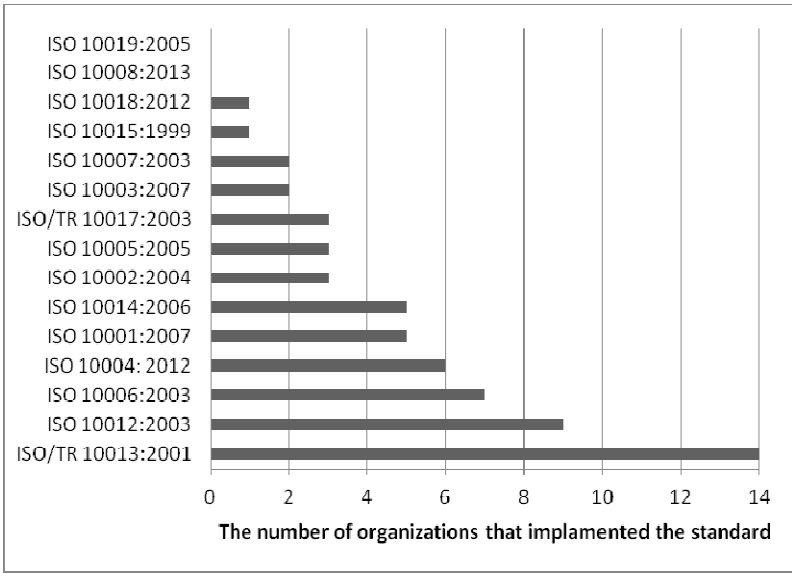

Figure 2. The rating of standards of ISO 10000 series using
Source: own research

When considering the degree of practical application of the ISO 10000 series of the standards, depending on the size of the organization it can be seen that small companies apply those standards in 6 cases (representing approximately 3% of the whole), medium in 8 (4%), and large in 46 (about 24%).

A small number of surveyed organizations do not allow for unambiguous assessment of the prevalence of the ISO 10000 series, depending on the business activities of the organization. However, it could be noted that

awareness of these standards and their practical application in manufacturing organizations (organizations of no. 6 to 19 - Tables 2 and 3) is much larger than in service companies (organizations no. 20 to 40).

The total unawareness of the standards has been observed in approximately 23% of the whole in relation to the manufacturing companies, and up to about 60% in the case of service entities. The practical use of these standards was declared by approximately 15% of the manufacturing companies, and by 7% of the service organizations.

It was also noted that the dissemination of the standards if the ISO 10000 series among organizations representing the food chain sector (organizations no. 1, 3, 4, 5 and 30 - Tables 2 and 3) is much smaller than the other. Lack of awareness of the existence of these standards for these entities was noted in approximately 85% of possible cases (40% for other entities). Only a single case of the ISO 10000 standard application was observed.

It seems that a very important link determining the prevalence of the ISO 10000 series is a person of the organization representative as well as the people who are managed by him.

Conclusions

As found previously the degree of dissemination of the ISO 10000 quality standards is highly unsatisfactory. This results from many factors such as deficient information on these standards, lack of reference to them in the ISO 9000 standards and perhaps lack of organisation's willingness and motivations. In many cases the plenipotentiaries complained of too large number of obligatory or quasi-obligatory product-related standards to be followed by organisations (e.g. low voltage directive 2006/95/EC currently calls 1180 harmonised standards). This issue is particularly important in the case of small organizations there is a lack the human resources needed to know and support multiple standards. Another problem is the actual need for use of these standards by organisations and the assessment of its usefulness.

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STUDY ON RELATIONSHIP BETWEEN EMPLOYEE VOLUNTEERING AND ORGANIZATIONAL COMMITMENT IN KOREA

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Introduction

The purpose of this paper is to explore the relationship between the employee volunteering and organizational commitment in Korea. In general, employee volunteering is regarded as central Corporate Social Responsibility (CSR) activities of most enterprises. Although CSR is not the ultimate goal of enterprises, it is essential in sustainable business in community relations. According to a survey of the Foundation of Korean Industries (FKI), employee volunteering participation is active so that more than 50% of employees take part in volunteering activities in 127 companies (72.6% of respondent companies) in Korea. Most companies organize corporate volunteer support team and have various volunteer assistance policies and programs.

Employee volunteering typically has the effects to spread the good images and brand of the companies and to formulate the organizational commitment and job satisfaction. In other words, employee volunteering contributes to community relation and positive culture in enterprises.

There are many results on the financial analysis and consumer effects of employee volunteering on the basis of stockholders' perspective in Korea. Recently studies begin to show the inner stakeholder effects of employee volunteering such as productivity and morale of workers, organizational norms, organizational commitment and job satisfaction.

Therefore, this paper examines the relationship between the employee volunteering and organizational commitment by reviewing previous research on employee volunteering of a few companies in Korea. Based on the results, this paper presents the implications for effective goal establishment and volunteering program planning to maximize the effect of employee volunteering in companies in Korea.

Literature review

Employee Volunteering and CSR

Employee Volunteering is also known as “corporate volunteering” or “employee-sponsored volunteering”. According to Cihlar (2004), a corporate volunteer program is “a planned managed effort that seeks to motivate and enable employees to engage in effective volunteerism under the official sponsorship and leadership of the company.” Also a corporate volunteering is defined as “the encouragement and facilitation of volunteering in the community through the organization by which and individual is employeed (Realized Worth, 2001).” As well, a corporate volunteer is defined as “any formal organized company support for employees and their families who wish to volunteer their time and skills in service to the community (Wild, 1993).” The concept of employee volunteering as a defined volunteer activity originated in the United States in the late 1970s and has been a growing activity globally ever since(The Centre for Volunteering, 2008).

As has been mentioned in the previous chapter, employee volunteering is seen as important CSR activities of most companies. CSR is defined as “a concept whereby companies integrate social and environmental concerns in their business operations and in their interaction with their stakeholders on a voluntary basis (European Volunteer Centre, 2009).” Most companies assume that CSR is a supported duty, rather than an option for business. Many companies enable and stimulate employees to volunteer, to contribute to social goals outside the company at the expense of the company(de Gilber et al., 2005). According to Crane, Matten & Spence(2013), there are six core characteristics in CSR:

- Voluntary,
- Beyond philanthropy,
- Managing externalities,
- Practices and values,
- Social and economic alignment
- Multiple stakeholder orientation.

As aforementioned, many companies participate in the CSR activities strategically as they assist employee volunteering in various ways. What drives them to participate in employee volunteering assistance?

Previous studies show that employee volunteering has many benefits in terms of company, employee and community. For empirical example, college students highly evaluated the futuristic reputation regardless of CSR types and general consumers highly evaluated the competitive reputation in the independent charity in Korea(Suh & Jin, 2008). Kim(2011) reported the

effects of CSR on the performances of various stakeholders by analyzing the various performances of CSR, such as employee, finance, product, consumer and community performances in Korea. The following table 1 summarises the benefits of employee volunteering.

Table 1. The benefits of Employee Volunteering

	Benefits
Company	- Improves relations with surrounding community; - Improves public image; - Develops cooperation and good relations with community leaders; - Improves recruitment and retention of employees; - Builds a cohesive, motivated workforce; - Increases employee performance and productivity; - Improves employee morale and reduces absenteeism; - Adds a potential source of information for corporate philanthropy and community relations programmes; - Improves understanding of the community and the company's customers; - Reduces isolation of employees from the community; - Increases effectiveness of corporate philanthropy; - Helps maintain a healthy community, which is essential to business; - Helps establish and enhance corporate or brand reputation in new or existing markets.
Employee	- Improves leadership and interpersonal skills; - Increases opportunity for employees to explore and develop new areas of expertise; - Reduces isolation and increases interaction with employees in other segments and levels of the company; - Adds variety and fulfilment and increases the sense of self worth; - Improves the community services that employees and their families use; - Increases and provides opportunities for more family interaction and activity time.
Community	- Provides new talent and energy by increasing the number of volunteers and the pool of available skills (especially managerial and technical); - Increases understanding between business and the nonprofit sector; - Improves the quality of life in the community; - Alleviates or eliminates community problems or deficiencies that detract from the well-being of the community; - Gives capacity to provide community services that otherwise might be impossible.

Source: Heuberger (2007)

In addition, the frequent supports provided by company are:

- publicizing the community's need for volunteers,
- organizing team projects,
- providing matching funds for employees devoting time to volunteer projects,
- acknowledging and providing awards or commendations for employees participating in volunteer programs,
- recognizing the volunteer efforts of employees in formal job performance evaluations,
- providing employees with release time from work (Wild, 1993).

Organizational commitment

Organizational commitment is core concept which most employers are interested in in terms of personnel management. Prior studies show that organizational commitment is an important attitudinal predictor of employee behavior and intentions (Mowday, Porter & Steers, 1982). Organizational commitment is defined as "an attitude reflecting an employee's loyalty to the organization, and an ongoing process through which organization members express their concern for the organization and its continued success and wellbeing (Northcraft & Neale, 1996)."

Many researchers have been interested in organizational commitment because there are many outcomes of organizational commitment. The examples of outcomes are the employee retention, attendance, organizational citizenship, and job performance. That is, organizational commitment might increase many employee performance outcomes such as are the employee retention, attendance, organizational citizenship, and job performance.

According to Meyer & Allen (1991), there are three components of organizational commitment:

- *Affective Commitment*: Psychological attachment to organization.
- *Continuance Commitment*: Costs associated with leaving the organization.
- *Normative Commitment*: Perceived obligation to remain with the organization.

All three components have implications for the continuing participation of the individual in the organization.

In addition, organizational commitment is a core concept which represents outcome variable regarding employees in CSR researches. In a research of employee volunteering, people with a positive attitudes towards the volunteer program have a more attitude towards the organization(de Gilder

et al., 2005). Employee volunteering seems to have positive effects on attitudes and behavior towards the organization.

Results and discussion

As above, employee volunteering is growing CSR activity in Korea companies. For example, Samsung established Samsung Corporate Citizenship and supports employee volunteering in various ways. Samsung employees participate in four major events-a blood donation campaign, a volunteer month on the anniversary of the company's foundation, a global volunteer festival, and a year-end "love your neighbor" campaign (Samsung, 2014). As well, they volunteer to share the holiday spirit with neighbors on Lunar New Year's day and Thanks giving day. Also employees in Samsung take part in specialized volunteering by sharing their knowledge, hobbies and specialties with the community.

This study investigates the relationship between employee volunteering and organizational commitment by reviewing previous researches about CSR in Korea. In recent years, there have been several studies on CSR of Korea companies as CSR is regarded as a strategic marketing. There are two main results as follows.

1. The relationship between employee volunteering and organization commitment in Korea firms

The relationship between employee volunteering and organization commitment in Korea firms has come to scholarly purview on recently in Korea. However, most of these researches yield similar results that there are strong relationship between them.

A research on the effect of a company's participation in volunteer work in a local community on the corporate image revealed the fact that employee volunteers generally satisfied with the current volunteer activity of employees(Lee, 2009).

In Yang (2013)'s survey of 240 employees in four Korea firms, corporate volunteer support facilitates positive(+) relations with employees' organizational commitment. In addition, the mediator effect of perceive organizational support also appeared to generate positive(+) relations. But the satisfaction of employees volunteering did not indicate any positive relations.

Kim (2011) shows the analysis on the various performances of CSR, such as employee, finance, product, consumer and community performances. This survey was conducted by using data from the Workplace Panel Survey 2007 and analyzing 438 samples from companies with over 300 employees. Kim revealed the several significant results. First, CSR affects the financial

performance indirectly via employee performance. Second, the consumer performance of CSR is hard to prove in this study. Third, higher CSR leads to higher performance of employees. In other words, employees who think highly of their company's CSR show higher job satisfaction and pride as well as better evaluation of their company. Fourth, CSR has positive effects on product performance. Fifth, CSR has positive effects on financial performance and human resources of the community.

In Rho (2010)'s survey of 300 employees working at one of corporations in Seoul Metropolitan area, a structural equation model was analyzed. The model showed that there was an indirect relationship between staffs' participations in corporate philanthropic activities and organizational commitment, which was mediated by employees' assessment and attitudes toward corporate philanthropy.

Kim & Jun (2013) have found a strong between CSR and organizational commitment. Employees with more engagement on CSR activities have stronger organizational commitment, i.e. more affection, higher pride and stronger satisfaction in their firms. On the other hand, employees who are critical against CSR have less affection, pride, and satisfaction in their firms.

These researches yield consistent results with previous studies. That is, there is the clear evidence about relationship between employee volunteering and organizational commitment in Korea like other countries.

2. The effect of support system for employee volunteering in organization

Several researches reveal the importance of support system in organization in order to maximize the effect of employee volunteering. Especially because of passive volunteer culture in organization and long office hours, employees feel fatigue about volunteering in organization in Korea.

Many companies establish the support organization or team for employee volunteering. These teams provide education for employee volunteering and plan for effective activity. In addition, they manage reward system i. e. incentive, money for volunteering activities or paid leave.

Like the preceding, there are several studies about the effect of support system for employee volunteering in Korea.

In Lee (2009)'s survey, volunteer employees reported that the more actively they participated in volunteer work, the higher satisfaction becomes and the higher satisfaction gets, the more continuously the volunteer programs of companies are performed, the stronger the support system is, the better it has an effect on corporate images and the more positively companies' contribution to society is recognized.

In Lee (2005)'s study on the case of Samsung and SK, enterprises provide the volunteering support systems such as volunteer accident insurance, money

for activity or transportation. As well, Samsung developed the certification system and manage the volunteering time of its employees. These support systems enable employees to participate in the volunteering activities in voluntary manner. Above all, employees who participate in volunteering activities and receive the benefits from these support systems feel proud of their company and satisfied with their volunteering activities.

These results are consistent with previous researches in other countries. Above all, because of passive volunteer culture in organization and long office hours, these support systems for employee volunteering enable employees to participate in the volunteering activities in voluntary manner.

Conclusions

This study has attempted to investigate the relationship between the employee volunteering and organizational commitment in Korea. By reviewing the previous research and cases of the employee volunteering in Korea, this study present several results as follows.

First, there is the clear evidence about the positive relationship between employee volunteering and organizational commitment in Korea like other countries. That is, higher volunteering participation leads to higher performance of employees.

Second, in order to maximaze the effect of employee volunteering, volunteering support system in organization is essential. Because of passive volunteer culture in organization and long office hours, these support systems for employee volunteering enable employees to participate in the volunteering activities in voluntary manner.

Based on these results, this study presents the theoretical implications for business and social work by bridging the volunteering activity and inner stakeholder marketing. In practical implication, this result contributes the importance of volunteering support system to maximize the effect of employee volunteering in companies in Korea. Above all, this study emphasizes the necessity of personnel or volunteering coordinator with professional knowledge and skills about education, coordinating, recruiting, communication with NGOs, etc.

Even though this study has theoretical and practical implication, there remain a basic limitations in this study. This study fails to present wide information about various employee volunteering programs of most companies because of limited data. Therefore, it is needed to gather and analyse the various information about employee volunteering programs of more companies systematically in the future study.

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RISK ASSESSMENT PROCESS IN THE CONTEXT OF QUALITY OF MEASURING INSTRUMENTS

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Introduction

Measurements are a basic source of information about the condition and characteristics of a product. It is on their basis that products are accepted or rejected. Measurements that are unreliable, may lead to false decisions i.e. a product which does not conform to specification may be accepted or a proper one may be rejected. In such cases both consumers and producer are put at risk, as it is consumers who suffer from a faulty product, and producers suffer consequences of rejecting proper goods. (Toczek, 2012). It is a major goal to achieve a widespread and a high level consumer protection in the whole EU. It embraces:

- security of consumption goods and services
- legislation connected with consumers' economic interest
- financial services
- electronic trade
- public services (transportation, energy etc.)
- international trade, standardization and problems with product marking. (Treaty on the Functioning of the European Union).

A measuring instrument is one of the elements of measuring process, and its proper quality characteristics influence the measuring process and its outcome. A quality characteristic of a device, based on PN-EN ISO 9000 standard, is connected with an established requirement of a device user, or other interested parties such as customers or society. Each of the stakeholder expects other values. (Gasiński 2012, p. 22)

Despite newest technological solutions and all the advanced technologies, none of complex measuring system is failure free to such an extent to be left unattended. It is vital to run self-testing procedures (it is done

in too little number of devices) periodically and very frequently, as well as to confirm externally the system's declared metrological and functional characteristics (Guzy, Wypych, p. 126). Metrological confirmation, according to PN-EN ISO 10012:2004 standard, is a set of operations conducted to make sure that measuring equipment conforms to requirements for its assigned use. The operations are usually the following: adjustment, calibration, and verification. Criteria for confirmation of metrological characteristics of a device are set by the user on basis of his customers' expectations towards his product or services. The user must than fulfill all legal requirements and the requirements set by accreditation or certification bodies.

Requirements for devices used in such areas as life and health care, environment protection, public safety or market where measurements are a basis for financial statements, are specified by regulations and the union's directives. When it comes to devices put on market on the basis of union's directives, two legal acts are applicable: Non Automatic Weighing Instruments (NAWI) and other Measuring Instruments Directive (MID). As far as devices used to inspect the quality of resources, materials or half-products, or to control technological process in production are concerned, requirements are defined in relation to an acceptable tolerance of the qualities of devices being measured.

The applied reference criterion is, therefore, influenced by the application of a device. Depending on an application of a device there are different systems of metrological conformation (qualification) of the devices. In areas closely related to life and health care, environment protection, public safety or consumers' rights protection qualification of devices is mainly handled by legal metrological control (type confirmation and legalization) and conformity assessment – performed by state administration organs or notified bodies. In all the remaining areas of application of devices qualification procedure is handled through calibration or a survey performed by calibration laboratories.

Both the producer and the user of measuring instrument must, therefore, make a decision about qualification and metrological confirmation depending on a kind of device and area of its application.

Material and methods

Threats and hazards to consumers are analyzed in the paper on two levels i.e. on the stage of putting devices on market and during their use. The analysis concerns devices applied in areas such as trade, health care, environment protection, public safety, consumers' rights protection or public interest protection.

To analyze threats preliminary data obtained by state organs units, who perform control over devices which are put on market as well as during their use, was used, and also information obtained from the users of devices basing on a poll survey.

Devices which are put on market or into use undergo conformity assessment in reference to the requirements of NAWI and MID directives on the producer's responsibility. The producer of a device is responsible for a product which is about to be put on market to be designed and produced in accordance to a particular directive requirements (The European Commission, 1999). State organs take control over this process and ensure a proper level of protection on a unified market. In Poland it is Urząd Ochrony Konkurencji i Konsumentów (Consumers and Competition Protection Office) who monitors the control system of goods put on market, while Inspekcja Handlowa (Trade Inspection) as a specified organ inspects the devices at producers, authorized agents or distributors. Particular kinds of devices require periodical verification and validation during their use. Devices being in use are controlled, in the name of a State, by standards administration.

Results and discusion

1. General principles of risk assessment in the context of measuring instruments

The requirement in Art. 19.1 of regulation No 765/2008 of the European Parliament and of the Council of 9 July 2008 setting out the requirements for accreditation and market surveillance relating to the marketing of products and repealing Regulation No 339/93 say that "Market surveillance authorities shall perform appropriate checks and, where appropriate, physical and laboratory checks on the basis of adequate samples. When doing so they shall take account of established principles of risk assessment, complains and other information." The risk assessment related to weighing and measuring instruments indicates considerable threats coming from nonconforming devices. It is also used as a tool to set priorities, actions and measures taken in the area of market control. Measures and actions shall correspond to the risk level and its influence on consumers, free flow of goods on a common market, honest competition among the producers of devices.

Risk is defined as the probability something may occur versus its impact.

Risk it is combination of the probability of unwanted occurrence and the severity of that unwanted occurrence.

Probability it is degree to which the unwanted occurrence has happened.

Impact – impact of the unwanted occurrence on the legal interest.

Legal interest – protection of the consumer, fair play for the manufacturer, confidence in the CE mark indirect confidence of the consumer, producer. (WELMEC, 2011).

Breach of legal interest may influence state's economy, public health, consumers' trust, and legal issues. The risk is calculated in reference to the kinds of measuring instruments or producer groups, suppliers and users.

To determine probability of appearance of nonconformities, one has to take into account:

- the frequency of nonconformities to requirements for a particular kind of measuring instrument,
- the frequency of producer's nonconformities to requirements for measuring instruments being put on the market,
- the presence of a management system at producers/suppliers
- the origin of measuring devices – either from a mass production or made as single units,
- possibility of easy verification of a device during inspection (control),
- possibility or history of periodical verification of measuring instruments among their users.

Risk acceptance depends on a country's technological development as well as contemporary needs and values that dominate in society.

The sources of information to identify threats are:

- consumers, consumer organizations, the media,
- producers, importers, suppliers,
- market control organs,
- results of inspections of instruments in use.

2. Risk management in the context of threats concerning measuring instruments

Risk management process conforms to PDCA Deming circle (Plan-Do-Check-Act).

Risk management in accordance with the diaphragm (Figure 1) is vital in order to implement and develop more effective law execution among producers, distributors and users of devices, especially in the areas connected with high risk. It also provides transparency and unity in the manners of how activities are handled by the EU members with respect to measuring instruments control. Risk management helps to make a decision in accordance to define goals and actions. (Szomański, 2012)

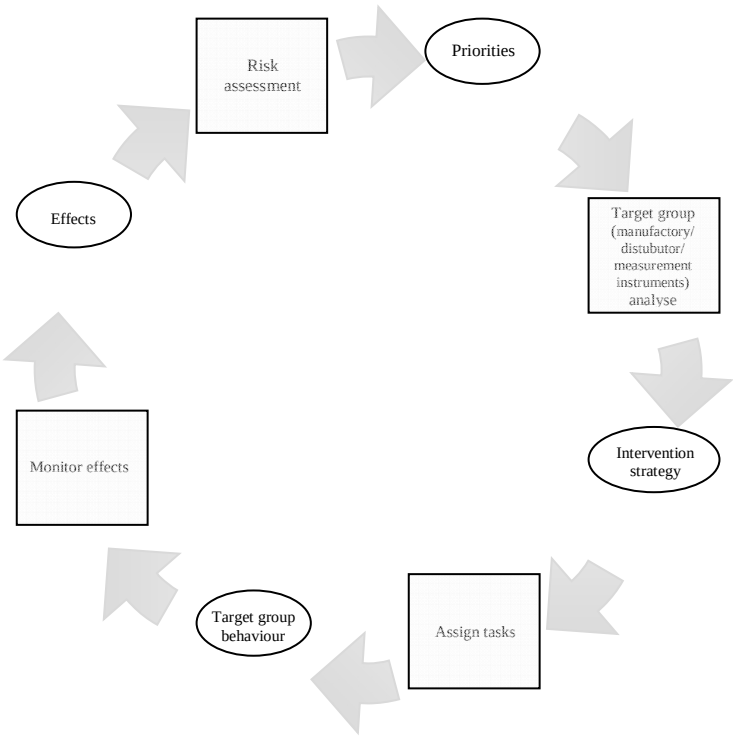

Figure 1. Risk Management Process

Source: WELMEC, 2011, Risk Assessment Guide for Market Surveillance: Weigh and Measuring Instruments

Plan

The organs which control the market of measuring instruments need to properly allocate their means of control in order to provide best possible effects in the perspective of state's interest. Because of limited resources and impossibility to cover all branches of the instruments market and all the products with actions at the same time, it is necessary to set priorities in actions. Planning of activities shall be conducted on the basis of a calculated risk in reference to subjects who put measuring instruments on market and use them (producers, suppliers, users), as well as in reference to the kinds and types of measuring instruments. Information obtained from the following sources is used to determine priorities:

- consumers, consumer organizations, the media,
- producers, importers, suppliers of devices,

- data from previous activities in market control,
- results of control during use,
- RAPEX (Rapid Exchange of Information System) reports. RAPEX is the EU rapid alert system which allows a quick exchange of information between the EU members and the European Commission on measures and activities undertaken towards products found on a unified union's market which are hazardous to consumers or users health and safety,
- ICSMS (Information and Communication System for Market Surveillance) system reports. ICSMS is an information system administrated by the European Commission which includes market control issues database (including market control programs, range of organs competence, activities of market control organs e.g. research results, consumer complaints etc.).

The results of risk analysis made it possible to develop a list of priority activities in reference to a target group of subjects which put measuring instruments on market or use the devices on market, and to identify necessary and effective activities.

Activities should concern the target group, particular kind and type of an instrument (e.g. will protection be higher if intense control is performed in reference to weights of II and III accuracy class).

Before the choice of a target group and a kind of controlled device is made, the following aspect should be analyzed:

a) behavior/actions of subjects who put devices on market or use them with respect to:

- the level of knowledge of legal regulations concerning measuring instruments put on market and those in use
- economic and social costs in case legal regulations are not respected or benefits from acting in conformity with standards
- the extent to which justified conduct in conformity with legal regulations is accepted
- necessity of internal controls in order to provide conformity of activities and products to legal regulations
- society's disposition to inform about nonconformities found on the market
- risks and consequences assessment of an exposure of nonconformities by state organs during inspections (economic and social sanctions).

On the basis of own research conducted among users of measuring instruments form the region of Wielkopolska (basing on 146 replies) it has been stated, that more

than half of the users is not aware of legal regulations concerning measuring instruments they use, nor do they recognize the markings placed on devices by state organs and authorized units after metrological confirmation. In particular:

- the users did not know what are the evidence of metrological confirmation of measuring instruments put on market on basis of NAWI or MID directives;
- the users did not know legal regulations being basis of a proper and lawful use of measuring instruments;
- the users did not know what is the significance of protection markings placed on a measuring instrument after conformity assessment or calibration, which may result in faulty readings or bad decisions in reference to consumers;
- more than 80% of the questioned users did not feel a need for internal controls/verification of measuring instruments during their use, as well as for expanding one's knowledge on measuring instruments they use;
- it has been noticeable that users who operate in management systems tend to give correct answers.

b) manner of how control is performed by state organs (formal controls based on documentation overview, controls of metrological characteristics of instruments including controls and inspections of instruments' software) and sort of sanctions (kind of sanctions, reaction time in reference to exposed nonconformities, estimate of the sanction).

Planning of actions on the stage of putting measuring instruments on market is done centrally in Poland by Urząd Ochrony Konkurencji i Konsumentów (Consumers and Competition Protection Office). Units which specialize in controls are Wojewódzkie Inspektoraty Inspekcji Handlowej (Regional Inspectorates of Trade Inspection). Planning is mainly performed on the basis of results of controls of measuring instruments in use and information obtained from other state organs. It also takes into consideration manners of distribution of instruments put on market.

Planning of the controls of measuring instruments being in use is done by standards administration organs on the basis of a systematic identification and analysis of needs which stem from socio-economic state of a country and challenges set by a dynamically changing environment in which standards administration organs operate. After the analysis of causes and mechanisms of the origin of nonconformities, control planning should take place with respect to the disclosed nonconformities and a risk of its occurrence.

With respect to conducted risk analysis, state organs should carry out their strategy and priorities. In case nonconformities to the requirements of legal regulations are found, it is necessary to take measures appropriate to the level of the nonconformities.

In the period between 2007 and 2012 Urząd Ochrony Konkurencji i Konsumentów in Poland controlled, in the area of measuring instruments put on market on the basis of NAWI and MID directives, producers, their authorized representatives and distributors (wholesalers and shops). When it comes to MID directive, most subjects were controlled in 2011 (44 subjects), while with respect to NAWI directive 33 subjects in 2007 and 25 in 2012.

Nonautomatic weights as well as other devices such as water meters, heat meters or energy meters were controlled. Controllers checked the documents accompanying a device (declaration of conformity, manual), estimated correctness of markings, solutions and procedures accepted by a producer or authorized representative in order to determine conformity of measuring instruments to requirements.

The largest ratio of nonconformities were found in 2011 (32%) with respect to devices put on marked basing on MID directive i.e. among water meters, energy meters, heat meters, taximeters.

Nonconformities found during the control concerned: lack or improperly issued conformity declarations, lack of conformity markings, lack of type examination certificates, incomplete data on nameplates mounted on devices, incomplete manuals. The controls did not assess metrological characteristics of measuring instruments. Despite this big number of nonconformities, no measures had been taken to intensify controls during the years of 2012 and 2013.

Controls performed by standards administration among users of measuring instruments were held i.a. in trading places, gas and LPG stations, pharmacies, motor vehicle inspection stations, post offices, health care and at users of water meters, heat meters, energy meters.

Only those measuring instruments were controlled which require calibration during their use.

The largest ratio of nonconformities have been found in previous years in utilities sector with respect to heat meters and water meters (ten-odd percent), and in trading places (less than 10%) with respect to scales and authorized weights. Nonconformities mainly concerned lack of valid proofs of metrological control – calibration (more than 95% of found nonconformities). (Wiśniewska J, Maleszka A, 2013)

Check

Monitoring of the strategy of control should concern the level of plan realization, means of fulfilling activities in reference to obtained results.

Monitoring process should include:

- passing information to market control organs operating in other countries where a producer of nonconforming measuring instruments was found
- periodical double control with reference to areas where nonconformities were found
- analysis of the results of measuring instruments control with reference to plans and obtained results.

Because of a little number of controls at the stage of putting measuring instruments on market, it may be assumed that the manner in which market control is performed in this area requires improvement and application of risk management process.

Act

It is required to improve control over measuring instruments performed by state organs, by means of certain risks overview and identification of new risks on the background of a changeable economic situation as well as previous planning experience.

An improvement activity is also cooperation between other state organs, producers and suppliers. It can include counseling and guidelines on directives implementation, possibility to expand consumers knowledge e.g. on safety, and users knowledge on a proper use of measuring instruments.

CONCLUSIONS

Analysis of activities in the context of risk assessment process reveals threats to consumers connected with a possibility of taking faulty measurements by users, which in longer term may result in bad managerial decisions.

Bad decision may be a result of:

- high level of nonconformities among measuring instruments especially in utilities sector (at media supplies) – while putting on market and during use.

- lack of enough knowledge among users, which could enable the use of measuring instruments according to law requirements, and a reliable and proper measurements taking.
- little level of users awareness about the need of conducting metrological control of measuring instruments (assessment of the terms of instruments application, accuracy of readings);
- little number of controlled measuring instruments put on market on basis of NAWI and MID directives;
- lack of systems approaches to controls planning at producers and distributors of measuring instruments, which produces difficulties in assessing efficiency and effectiveness of market control.

In order to limit the risk of inaccurate measurements in areas such as health care, environment protection, safety, circulation of goods, it is necessary to educate consumers who use the results of measuring activities, as well as to perform effective control over measurement taking process.

It has been noticed, that the fact of having management systems certificates in place influence an increased awareness among the users of measuring instruments with regard to legal requirements and a proper metrological control.

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