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## **THE PRINCIPLES AND THE SPECIFICS OF TRADING IN COMMODITIES**

Dušan BARAN, Anita HERBACSKOVÁ<sup>1</sup>

### **Abstract**

*In the present period of instability on financial markets, investments in commodities are the solution for elimination of the consequences of inflation and ensure the yield. When investing in commodities, the use of specifics of commodities compared to other assets. The distribution of commodities we can interpret for agricultural commodities, commodities of energy, precious and other metals, and weather. Therefore, in the framework of the investment portfolio are the commodities. This is the reason why one of the most popular types of investment assets now become commodities. In the interpretation of particular commodities we talk about commodity futures. The reason is that the spot market with commodities is limited storage facilities. The growth of the popularity, which allows a wide range of commodities, has caused that in addition to from institutional investors and speculators for trade may involve even small investors. This development will be supplemented by interpretation of the charts and figers, which will be commented and used for generalization of knowledge. Finally, the article will be interpreted by the further development of the market for commodities as it by article assumes from the results of research.*

### **Key words**

*commodity, futures, investments, liquidity, inflation, financial market, portfolio, risk, metal.*

### **Introduction**

Investments in commodity markets are still considered to be unusual by the general public. Within financial markets there was a long period in which trading on commodity markets remained in the background. The reason for this being in subdued trading with low prices of commodities and limited opportunities for small investors to participate on the market. Despite of that in the last period commodities have increasingly been gaining attractiveness as valuable investments for many investors. This change in thinking of small investors led to the growth of popularity of trading with commodities. At the same time the

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product range of this market has been significantly democratized and smaller investors have also been allowed to participate on trading with a segment that was formally exclusively designed for corporate clients and speculators with large volumes of investments. There are many possibilities to get involved and to take part at the incomes of the worldwide growth of prices of commodities, as well as views and opinions on each type of investments into commodities. There are several options to take advantage of growing prices of commodities on both prompt and forward markets. The most significant and widespread terminated trading are derivative securities futures.

### **Futures contracts**

Futures is a standardized forward traded on derivative exchange. Practically, it is a contract for settlement (exchange and delivery) of underlying instruments at a certain date in the future, while the settlement period is longer compared to the practice on spot market (2, pg. 186). Futures contract is an agreement between two parties to buy or sell certain underlying instrument in standardized quantity of a prior specified quality at a certain date in the future, i.e. at the so called contracted delivery month, and at a predetermined date. (1, pg. 29).

The interested traders do not have the option to withdraw from the contract. Futures contracts are traded on public derivative exchange.

### **The development of futures**

The first standardized futures exchange market was founded in the USA, in big cities like Buffalo and New York. However, the development of modern futures began in Chicago in 1840. Chicago exchanges arose when large fertile prairies of Midwest were sown with corn. This area was interesting for its location and construction of railway. Thus in the mid 19th century Chicago became the crossroad and the centre of trade between farmers and lacking people from the eastern coast of the USA. These factors gradually lead to formation of central market. During this period trade, that took place here, was inefficient and disorganized.

Fluctuation was great, prices ranged from one extreme to the other. In the time of harvest prices would fall and the bigger the harvest was the lower the prices were. As consequence of this situation, the lack of place for storage and the absence of long term storage resulted in corn and wheat rotten in the streets or on fields. Trading worked as a cash market –corn and wheat was delivered and paid on spot. This phenomenon – seasonality, caused that commodities, which the population inevitably needed the following spring when there was a lack of supply, became inaccessible basic necessities. Prices of these commodities would grow exponentially. Traders and brokers safeguarded against changes in price so, that they paid very little to farmers while on the other hand sold these product to consumers at significantly higher prices. We find in historical documents that in 1848 a group of 82 businessmen founded the first commodity exchange Board of Trade of the City of Chicago (CBOT). At this commodity exchange trading was carried out initially only on cash markets. Producers and dealers soon realised the benefits of contracts for sale or purchase in the near future, the so-called “to arrive” contracts. These contracts allowed buyers and sellers to determine the supply of a selected commodity at prior agreed upon price and fixed deadline of transaction. These contracts, which helped buyers and sellers in long-term planning are known as forward contracts (2, pg. 101). In the same time, with the increasing number of forward contracts their shortcomings emerged to the surface. There were deficiencies as

failure to fulfil obligations, deadlines, quality of supply, as well as the complexity of negotiation of these contracts. This was the reason, why the Board of Trade of the City of Chicago (CBOT) decided to make forward trading more effective and to unify it in terms of quantity, quality of delivery, dates and place of delivery of the commodity. According to this, in 1865 trading was standardized. Since then these contracts have been called futures contracts. These standardized forward contracts unlike other forwards have been possible to trade only at designated times. Another difference was that the offer and the negotiated prices of deals have been published. The only variable element remained the price. Standardization of contracts and the possibility for compensation of position caused that people who wanted to decrease losses from the closed position, could compensate futures contracts with participating in opposite trade: purchase of contract which they have sold before or sale of the contract they have bought. The main benefit of futures was clear, so over the next decades further futures exchanges have been founded in the USA. Regardless of that that Chicago has become the most influential and dominant place for trading futures in the USA (2, pg. 91).

### **Division of commodities**

The first underlying asset of futures contracts were agricultural crops. During the twentieth century new financial instruments were formed – financial futures. Regardless of the fact that the volume of purchases of these financial futures contracts far exceed the volume of transaction with commodities, contracts are included into the field of commodity trading. According to this, the term commodity is used for all futures contracts.

#### **- Types of Agricultural Commodities**

- ***Agricultural commodities of plant origin:*** soybeans, soybean oil, soybean meal, rapeseed, crude palm oil, corn, oats, barley, wheat, rice, cocoa, coffee, cotton, wood, orange concentrate, sugar, wool, silk, etc.
- ***Agricultural livestock commodities:*** fattening beef, beef for slaughter, whole hogs, pork sides, milk, butter, cheese, etc.

#### **- Energy Commodities**

- ***Energy commodities:*** crude oil, gasoline, heating oil, natural gas, emission allowances, kerosene, electricity, coal and so on.

#### **- Types of Metal Commodities**

- ***Precious metal:*** gold, silver, platinum, palladium
- ***Industrial metal:*** copper, lead, aluminium, zinc, tin, nickel, uranium, etc.

#### **- Weather**

- Temperature, snow, frost, rainfall, hurricanes, etc.

#### **- Financial Instruments**

- ***Equity indexes:*** Dow Jones, S&P 500, E-mini S&P 500, Nasdaq 100, Russell, E-mini NASDAQ-100 Futures, Nikkei 225, FTSE, SMI, EuroStoxx 50, US Dollar index, etc.
- ***Commodity indexes:*** Rogers International Commodity index, Dow Jones - UBS Commodity Index, Goldman Sachs Commodity Index (S&P GSCI), Thomson Reuters/Jefferies CRB Index, CRB Continuous Commodity Total Return Index, etc.

- **Currencies:** U.S. dollar, Australian dollar, British pound sterling, Canadian dollar, Euro, Japanese yen, Swiss franc, Swedish krona, Mexican pesos, etc.
- **Bonds and interest rates:** 90Day T-Bills 90, T-Notes 2yrs, 5yrs, 10yrs, US TBonds, 3mo Eurodollar, 3mo Euroyen, Libor 1 mo, F-funds 30 day, Bondfuture, etc.

### Specification of futures contracts

Regardless of the type of investment or commodity contract it is important for investors to have as much information about their investment activities as possible, and in particular, clearly understandable information. It is necessary to note again that futures are always standardized. Meanwhile, there are significant differences between futures contracts, which can ultimately affect the outcome of the investment.

#### SHOWS THE SPECIFICATION OF FUTURES CONTRACTS ON AGRICULTURAL CROP – CORN

Table 1

##### Corn Futures

Contract Size	5,000 bushels (~ 127 Metric Tons)	
Deliverable Grade	#2 Yellow at contract Price, #1 Yellow at a 1.5 cent/bushel premium #3 Yellow at a 1.5 cent/bushel discount	
Pricing Unit	Cents per bushel	
Tick Size (minimum fluctuation)	1/4 of one cent per bushel (\$12.50 per contract)	
Contract Months/Symbols	March (H), May (K), July (N), September (U) & December (Z)	
Trading Hours	CME Globex (Electronic Platform)	6:00 pm - 7:15 am and 9:30 am - 1:15 pm central time, Sunday - Friday Central Time
	Open Outcry (Trading Floor)	9:30 am - 1:15 pm Monday - Friday Central Time
Daily Price Limit	\$0.30 per bushel expandable to \$0.45 and then to \$0.70 when the market closes at limit bid or limit offer. There shall be no price limits on the current month contract on or after the second business day preceding the first day of the delivery month.	
Settlement Procedure	Physical Delivery	
Last Trade Date	The business day prior to the 15th calendar day of the contract month.	
Last Delivery Date	Second business day following the last trading day of the delivery month.	
Product Ticker Symbols	CME Globex (Electronic Platform)	ZC C=Clearing
	Open Outcry (Trading Floor)	C

Table no 1: Specification of futures contract on corn

Source: [12]

### ***Contract size***

Contract Size indicates the amount of the purchased commodity of one futures contract. The exchange firmly fixes the amount of underlying assets it represents for each contract. For example, grains are traded in standardized units of 5000 bushels per contract (purchase of one grain contract is equal to purchase of 5000 bushels of grain.), for gold it is 100 troy ounces, for coffee 37 500 pounds, etc.

Contract size is the product of price and volume of the underlying asset. Specifically, if for example, the trading price of grain was 6 USD, this price would refer to one unit of measure. Contract size would thus be 5000 bushels x 6 USD, i.e. 30 000 USD. .

### ***Product tickers symbols***

All futures contracts have a determined unique one or two letter code for accurate identification. These symbols are especially important when entering orders for electronic trading. An error in entering can cause confusion, which may lead to major problems for the trader. Commodity Exchange also sets the quality standards for a given commodity, date and place of delivery of the commodity, terms of payment, which are required to keep.

### ***Contract months symbols***

According to the rules of trading on commodity exchanges particular commodities can be purchased with different dates of delivery even some years ahead. The list of months in which the commodity is traded is called the expiration cycle of a contract. Each month has its own abbreviation: January – F, February – G, March – H, April –J, May – K, June – N, August – Q, September – U, October – V, November – X and December – Z.

### ***Last trade date***

Last Trade Date or LTD is the absolutely last date when an investor can dispose of a contract and so avoid taking the commodity over physically. In addition to LTD, each futures contract has its own FND – First Notice Date, which is the date when the contract holders are notified, that they possess a contract for purchase of a given commodity. Traders, who are not interested in the physical delivery of the commodity, hold their position as long as possible, i.e. until the date of FND. Once FND is approaching, investors sell their contracts, so they dispose of the commitment to take the commodity over physically. According to experience, we can state that very few trades with commodities result in actual physical transfer. In this sense, we can distinguish two types of futures contracts.

First, there are contracts, which provide physical delivery of a particular commodity. The majority of speculators in the futures markets decide to realize their incomes or losses by purchasing or selling compensation futures contracts before the FND.

Some futures contracts progress typically on the basis of cash settlement and not physical transfer. As an example, we can mention a situation when a trader holds a position in a stock futures contract until its maturity. So, he simply receives (or pays) the final profit or loss based on the difference between the input and final buffer price (3, pg. 24).

### ***Daily price limit***

For each commodity, Exchanges set a daily price limit, which limits the volatility of prices during one day (Daily Price Limit). It is the maximum price deviation from the closing price the day before. The reason of introducing price limits is the limitation of the very high price volatility, or possible price manipulation. If the price moves beyond the price limit, trading is usually suspended to give traders enough time to calm down. Price limits also provide the clearing centre enough time to ensure larger additional margins from traders who have had losses. With increasing market volatility, limits are subject to change. We know that some



commodities do not have a stated limit for the last month of trading. Reasons of these limit movements come from several reports, or catastrophic news and the sudden onset of panic on the market (2, pg. 194).

### ***Tick size***

Tick is the minimum price movement, the smallest unit set for each commodity by which the contract price can move up or down. It is understood that different commodities have different minimums. As an example we can mention the commodity – grains. Their tick is  $\frac{1}{4}$  of one cent per bushel. One contract is 5000 bushels of grain, the minimum price movement – tick size for a contract is therefore  $0.0025 \times 5000 = \$12.50$ .

Chart no. 1 shows the range of daily movement of futures contracts of agricultural commodity – sugar.

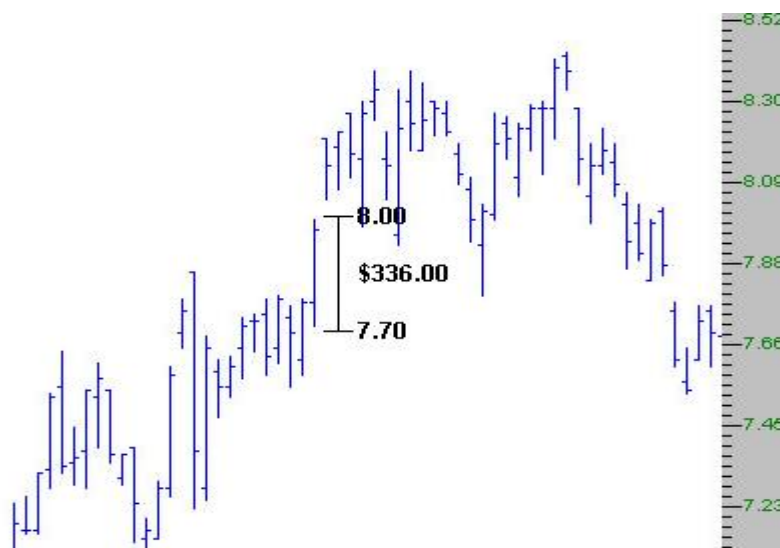


Chart no. 1: Range of daily movement of futures contracts on sugar.

Source: [13]

On the chart we can see the range of daily movement from 7.70 to 8.00 points. At the same time, according to the tick values in the chart, we know, that the minimal movement of sugar is 1/100 cent/lb and this movement is worth \$11.20 (112 000 pounds  $\times$  0.0001). Price of sugar changes in hundredth – the smallest price movement is from 7.65 to 7.66. The minimum value of this movement is \$11.20. Change of a single point (e.g. from 7.65 to 8.65) is worth \$1 120. In the chart no. 1 the price grew by 30 cents from 7.70 to 8.00. With the value of \$11.22 per cent this price movement results in the value of  $30 \times 11.20 = \$336$ . The range of daily movement according the chart is \$336 this day (14)

### ***Scrolling position***

Each futures contract has a given maturity. That means that we cannot hold it indefinitely. After the last month, all contracts that fall into the month are settled. If a trader with futures contracts is not interested in physical delivery of the actual commodity, at the same time he wants to keep his open position, he has to sell and buy (or buy and sell) the contract in a further contract month. This procedure is called rolling futures contracts. This relatively

common situation is known as Contango. In such case, the spot price of the underlying instrument is higher than any forward price of the underlying instrument. That means that contracts with a remote expiry date are more expensive than current contracts. This situation arises when the maturity date is longer, so interest expenses become higher (financial expenses) and the cost of storing the underlying asset rises, too. For an agreement investor it is a problem, especially in the case of index investing. The consequence for the investor is that he may have a loss of several percent of his investment. The opposite of Contango is Backwardiation. In case of Backwardiation the price of a contract with a more remote maturity is lower than the price of a contract with a shorter maturity date. This condition leads to an abnormal positive impulse on the market, expressed by low demand or major offer of the underlying asset. In that case the investor has significant incomes, but such situation is very rare.

### Conclusion

In the article, we introduced basic principles of commodity trading. We also represented some of specifics of trading with commodities. We interpreted the procedure and changes in commodity trading from physical form to trading with futures contracts representing derivative securities. Insignificant trading with commodities was mainly caused by low prices of commodities and limited possibilities for small investors to participate in commodity market. Nowadays, commodities are becoming more and more popular investment opportunities for small investors. The wide variety of products on this market has significantly democratized the market and allowed small investors to participate in trading with a segment that was previously reachable only for institutional investors and speculators with large volumes of investments.

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## **INDIVIDUALISATION OF LEAN CONCEPT IN COMPANIES DEALING WITH MASS PRODUCTION**

Roman BEDNÁR<sup>1</sup>

### **Abstract**

*The methods of lean manufacturing primarily designed for businesses dealing with serial production, are also used in other types of production. However the concept of lean production was not designed for these types of businesses, they are utilized only partially. Paper focuses on applying methods of lean concept in companies which are dealing with mass production and their options of exchange for other methods in the event of disagreement. Basis of the article is a list of lean methods with its description and its utilization in practice. The questionnaire was utilized to identify information from the practice. Based on this survey were identified the critical methods that are no longer appropriate for companies dealing with mass production. However, there are alternative methods of describing the problem. It is possible to say that companies are trying to get closer to their goal by modification of the basic concepts. And the concept of Lean Enterprise serves as a standard.*

### **Key words**

*lean production, mass production, alternative methods, and lean methods*

### **Introduction**

Apart from past or recent times, the aim of production businesses was always to produce goods with low costs and high profit. Economic crisis showed that it is necessary to focus on reducing costs. Hiding problems of production lines by high stocks is no more solution in mass production. Corporate management has to focus on revealing and solving problems. The portfolio of solutions of these problems is globally large. It consists of complex systems of e.g. lean manufacturing, six sigma, TOC (Theory of Constraints) or elder approaches through simple methods. In this article, we will focus on application of lean methods in mass production and their modification with utilizing knowledge obtained from questionnaire survey. The modification is necessary because it is not primarily designed for mass production. This concept deals with restricting all activities to those that add value to the customer. When the conditions are ideal, the concept is very good and utilization is possible

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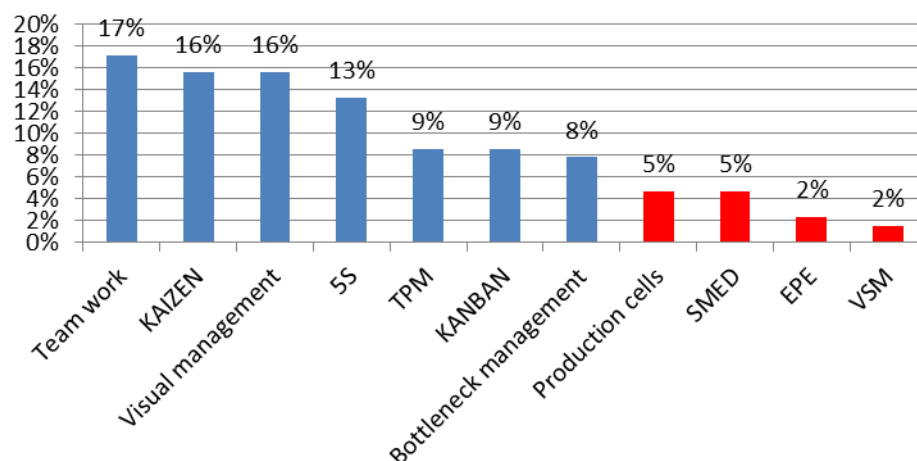
in current production system. In non-ideal world, many conditions limit the applicability of this concept. The main condition is to utilize well-repeated production with no major changes in orders.

### Main text

The major part of article is to inform about the state of utilizing lean methods in praxis in mass production so we realized the survey in the V4 countries focused on knowledge and level of utilization of lean techniques in industrial enterprises. In this questionnaire, we contacted 605 respondents from industry. 161 organizations answered the questionnaire, which represents return 26.7%. 39% of that was large companies with a staff of more than 250, 35% was small companies employing up to 50, and 26% was medium-sized companies, where the number of employees ranges from 51 to 250. We evaluated the utilization of the fundamental concepts of lean manufacturing, which are usable in the production system, namely: KAIZEN, teamwork, bottleneck management, KANBAN, visual management, VSM (Value Stream Mapping), 5S, production cells, TPM (Total Productive Maintenance), SMED (Single-Minute Exchange of Die), EPE (Every Part Every day).

The questionnaire was focused complexly on utilization of lean methods in all types of industrial businesses. In the next step, we separated the corporations with mass production. It is possible to say that all methods of lean concept which not impact the production processes are applicable also in mass production.

The survey results showed the applicability of lean methods in mass production. The methods are ranked from most utilized to least utilized: Teamwork, KAIZEN, Visual Management, 5S, TPM, KANBAN, Bottlenecks Management, Production Cells, SMED, VSM and EPE. The order of these methods can be divided into two groups, methods applicable in mass production (blue zone at the figure 1) and the methods not applicable in mass production (red zone at the figure 1).



**Fig 1** Utilization of lean methods in mass production

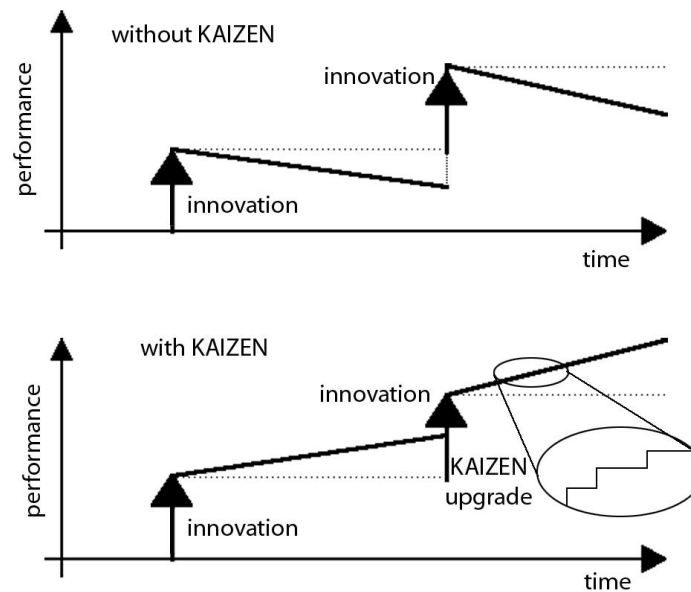
Mass production has specific conditions in some areas. We will discuss these conditions in descriptions of individual methods.

## **Useful method for application to mass production**

The following sections briefly describe each method and its validity and utilization in mass production.

**Teamwork** - is a way of organizing the work based on common participation, common cooperation and responsibility of all the team members. The research showed that method of teamwork is one of the most common in mass production. Benefits in the area such as increasing production and an application of the idea “more people, more inspiration” are appreciable. Application of teamwork decreases the risk of making wrong decisions; it helps to strengthen interpersonal relationships; supports competition between individual teams and brings many other benefits, which are undeniable. Teamwork has disadvantages, too. Some of them are: we cannot utilize the management methods based on commands; shared responsibility can have consequence of lower personal responsibility; the work can be cumbersome; if the team has too many members, there are higher demands on time than individual. Opposite of teamwork is classical management of employees, which can be centralized or decentralized. In mass production, both types of management can be utilized. In the long term, the utilization of teamwork seems to be more valuable especially in improving the corporate culture. However, this is related to the investment in education and training courses, which can be considered as the biggest disadvantage (1).

**KAIZEN** – the method is designed to capture the improvement from all the corporate employees. This method is not designed only for manufacturing process, but it is designed also for every process where it will be implemented. Its principle is to process every suggestion of improvement. The main part is to analyze the impact of the change to corporation. Only after this step we are enabled to apply the change. The changes are captured anonymously without any claim on reward or directly from the employee. The aim of application of this method in corporation is to transfer the effect of change on employees and motivate them to search for another possible improvement. Effort of this method is to implement big and also small changes and after this we are able to achieve more productive corporation. There is a traditional improvement opposite the KAIZEN. In traditional improvement, the impact of the innovations is gradually disappearing. The figure 2 shows us a gradual improvement by small steps after big innovations, instead of loss of performance without the gradual improvement (2). Corporations dealing with mass production do not have any restrictions for application of the KAIZEN method.



**Fig 2** *Kaizen improvement*

**Visual management** – it is possible to share important information through visual management. Shared information can be static or dynamic. The benefit is that they are permanently available, but the disadvantage of static information is that they can be outdated. Of course, not all of the commands can be mediated through visual management. Through visual management, we can have information about positioning the elements of production, number of operating units, operating aisles, transit route, restriction of movement of the employees, operating performance, the aim of corporation, operating plan, and production process. The benefits of this kind of management are: increase of the productivity, clarification of material flows, clarification of information flows, increase of work safety, decrease of accidents and reduction of stock. The best example of utilization of visual management in mass production is marking the minimum, insured and maximum number of stocks.

**5S**– the name of the method is a short cut for five steps that help us to achieve clean workplace, which is adapted only to work. It seems that the tidiness is a matter of every single employee, but it is not like that. Clean and to work, adapted workplace enables the worker to utilize the time, which he spends on searching for the tools and equipment. Saving the time is not the only benefit. Another benefit after application of this method is faster fault detection of the devices; increasing the workplace; increasing the stocks in workplace and also improvement of the corporate culture. Utilize of this method is suitable in all areas of the corporation. 5S method consists in the gradual implementation of these five steps: 1. removing all the unnecessary elements from the workplace, 2. positioning necessary elements to a good reachable place, 3. cleaning the workplace and defining the areas of cleaning, 4. standardizing of the first three steps, 5. adherence of established standards and signing the confirmation of work which was done. The 5S is not restricted by conditions in mass production. It is possible to utilize the method in production and administration processes.

**TPM** – this method is utilized to maintain the constant working pace without unexpected failures. Although the mass production characterized by the production to stock, and thus the

variation in the consumption of products is ready, shutdown of production due to unexpected disturbances may take some time. The TPM program consists of six areas: program of autonomous maintenance of equipment, program of planned maintenance, program of education and trainings, planning program for new equipment and units, maintenance system and information system, program of increasing of OEE (Overall Equipment Effectiveness). The TPM method influences the production processes indirectly by maintaining the system in operation without unexpected downtime. TPM has a supportive character on production processes, so the application without any restrictions is possible also in mass production.

**Bottlenecks management** – utilize principles of TOC (Theory of Constraints). In field of mass production is this method crucial. Removing bottlenecks and consequent increase in the flow line is the main objective of bottlenecks management. The traditional idea of the full utilization of all resources is not productive in this case. It is necessary to identify with the fact that the machines, which are bottleneck, must be the most utilized of capacity, and other devices must adapt production to the needs of bottlenecks, they cannot work otherwise. It is evident division of the production facilities, which are bottleneck facilities and are not bottleneck. The aims of TOC are maximize flow, minimizing stocks and minimizing operating costs. These objectives can be achieved by cycles of activities: **1 Identify bottleneck, 2 maximum utilize of bottleneck, 3 Customize the whole performance by bottleneck, 4 remove the current bottleneck, 5 back to point # 1.**

In accordance with the management of bottlenecks, it is necessary to invest resources to remove the bottleneck.

### **Less useful method for application to mass production**

In the next part of this article, we will deal with methods, which have not been used often. These methods are in red zone in figure 1.

**KANBAN** – apply pull approach to managing the material flow. Its application is less applicable in companies dealing with mass production. The main reason is the gradual entry of work orders away from the final operation. Mass production is characterized by the production lines that are already configured for optimum run, it is not necessary to control the flow through the KANBAN. Push management system in this case is preferable especially in situations where it is necessary to use higher among stocks. It is mainly a single piece flow in KANBAN system, which limits the utilization of the method in mass production (3).

**Production cells** – material flow of production cells has a characteristic shape as a letter U or C. The requirements for successful application production cells are **one piece flow**, and variation of production, and multi-machine handling. The conditions of mass production are not adapted for the application of this method, similar to the method of KANBAN. Selection of conditions for application of production cells which are not in mass production: one piece flow, variant production small production cells with shape as a letter U or C.

**SMED**– the method of rapid changeover is in limit of applicability for mass production. Use of this method is of course possible, however it is necessary to compare the costs to implement of this method with saved resources. Among these costs, include preparation for production changes and training of personnel. Characteristic just for mass production, changeover will not be used. In the field of mass production would be possible to apply the



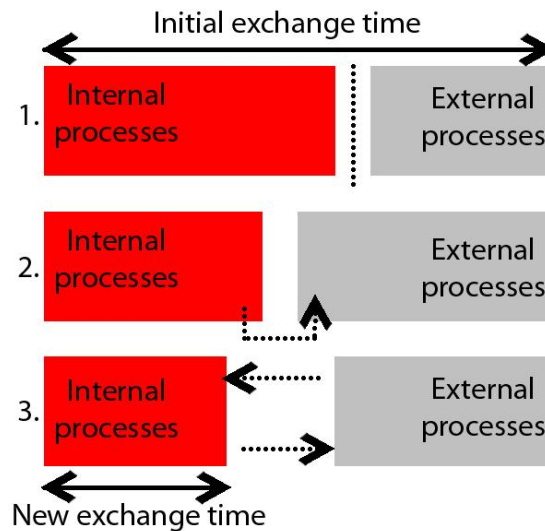
method in the first and second step. In Figure 3 shows the running applications SMED method. The length of the rectangle represents the duration of the activity.

**First Step:** Separate the work to be performed during switched off devices - internal activity from work that can be done on the fly - external activities.

**Second Step:** Move most of the internal activities to external activities.

**Third Step:** Reducing internal and external time, through changes in production.

Figure 3 shows course of application of SMED method. Length of the rectangle shows the duration of the activity.



*Fig. 3 SMED*

**EPE-** Application of the method EPE is closely related to production of multiple products. The primary purpose of this method is the production schedule so that each product was produced in each day, which should result in increased flexibility to customer requirements. Production of each piece every day is closely tied to the SMED method, without which the rapid change during the day was not effective. Since flexibility and mass production are far from each other is not appropriate to use this method in the main production process. Labeling the amount of products produced in mass production is mainly provided by the prediction of demand. The company learns to predict accurate demand for its goods so it learns to save on its costs. The forecasting method is therefore a key to saving costs in mass production.

**VSM** – The VSM method belongs to the first ones that are applied in the concept of lean production. It is possible to reveal areas in which we have to start improvements through VSM. However, if production does not change as it is in mass production using this method is not necessary. However, it must be guaranteed condition of good design of production. This procedure replaced VSM in mass production. Utilize these method is not excluded since can help especially with standardized processes and detect mistakes in the implementation of primary production, which has been revealed in the project documentation and simulation of production.

## Conclusion

Mass production is mainly characterized by its production to the warehouse. It is focused on an anonymous customer. It is utilized in the production of large quantities. Its project part is much more important than in other types of production. Production lines are built for order. The production is limited by similarity of technological processes. That is why it is so important to well design the production lines at the beginning in corporations dealing with mass production.

Methods of lean concept support this type of production, with the exception of management bottlenecks. However, despite of the supportive character of these methods businesses dared to go in that direction. The stocks have the biggest impact on reducing the costs in mass production. The most important part of the production is the prediction of demand. In this case, mass production can save relatively higher costs compared to applying lean methods. However, the small improvement may prove after years as a significant cost savings.

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## **FINANCIAL AND TAX MANAGEMENT IN SMALL AND MEDIUM SIZED INDUSTRIAL ENTERPRISES**

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Martina HORVÁTHOVÁ<sup>1</sup>

### **Abstract**

*Target of this paper was to evaluate the importance of small and medium sized enterprises (SMEs) in Slovakia and to determine the application of financial and tax management in this type of enterprises. The results of our findings confirm that SMEs have an important role in Slovakia, and also that especially small businesses have little or no experience with the application of financial and tax management. Therefore the paper contains recommendations for financial and tax management of SMEs.*

### **Key words**

*small and medium sized enterprises (SMEs), financial and tax management for small and medium sized industrial enterprises*

### **Introduction**

SMEs play an important role in the economy of countries with a developed private sector and competitive markets. They are considered to be the engine of economic growth and a major source of technological innovation and new products. They increase competitiveness and efficiency in markets and are often more flexible than large firms in adapting to new customer requirements, facilitating workforce change employment and play a major role in removing regional and sector imbalances in the economy

### **Materials and methodology of experiment**

Our target was to assess the importance of SMEs in Slovakia, to check the application of financial and tax management in this type of enterprises and to suggest measures for their financial and tax management. Information has been obtained by processing of statistical data, solutions from final papers and interviews with managers of industrial enterprises.

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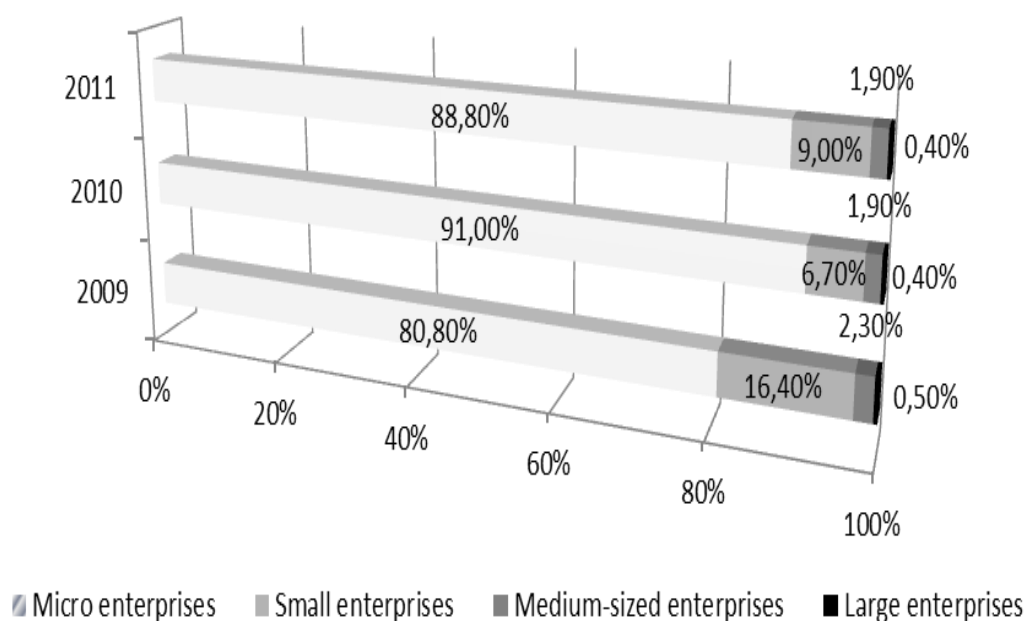
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## Reached results - Current status of SMEs and the application of financial and tax management in this type of enterprises

Definitions of small and medium sized enterprises vary from country to country. SMEs are mostly defined with help of quantitative measures (number of employees, revenues, owner's equity, etc.).

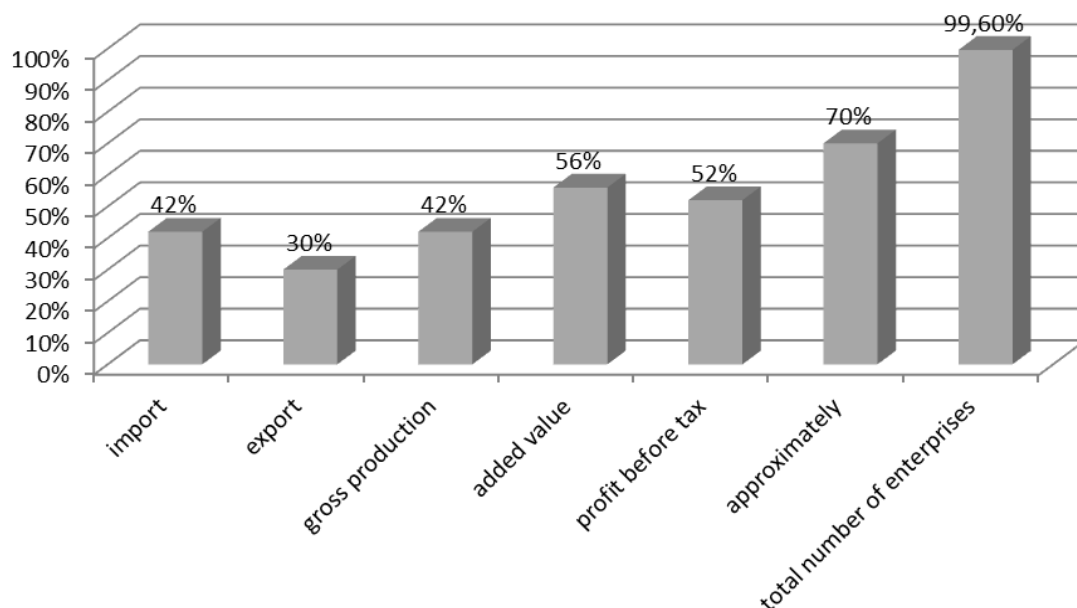
Slovakia has adopted the SME definition of the European Commission which, per recommendation 2003/361/EC, effective January 1, 2005, states that SMEs are autonomous enterprises which employ fewer than 250 persons, and which have either an annual turnover not exceeding 50 million euro, or an annual balance sheet total not exceeding 43 million euro. Within this category, small enterprises are defined as autonomous enterprises, which employ fewer than 50 persons and whose annual turnover or annual balance sheet total does not exceed 10 million euro. Micro enterprises are defined as autonomous enterprises, which employ fewer than 10 persons and whose annual turnover or annual balance sheet total does not exceed 2 million euro. All other enterprises belong to the group of large enterprises.

Development of enterprise structure by size category and by number of employees in Slovakia between 2009 -2011 is shown in the following figure (3).



**Fig. 1** Development of enterprise structure by size category

The importance of small and medium sized industrial and nonindustrial enterprises in Slovak economy is major. This fact is documented by the following numbers. Small and medium sized enterprises, including industrial enterprises, accounted for more than 42% of slovak imports, for 30% of exports, 42% of gross production, 56% of added value, 52% of profit before tax, for approximately 70% of total employment and for 99.6% of total number of enterprises in 2011 (Fig. 2), (3).



**Fig. 2** *The importance of small and medium sized industrial and nonindustrial enterprises in Slovak Republic*

Most small and medium sized enterprises are active in services, in construction business and in industry. Industrial enterprises have an important role in the structure of SMEs. 16.3% of sole proprietors and 9.5% of small and medium sized partnerships and corporations were active in industry (3).

A key tool for helping SMEs survive in an ever-changing, highly competitive environment, is effective financial and tax management.

Financial management may be defined as a subsystem of overall company management focused on managing financial processes (financial planning, financial decision-making, organization of financial processes, and financial analysis and control), and with the goal of maximizing shareholder value. The main tasks of financial management are to obtain requisite financing, to allocate finances effectively, and to determine the company's profit sharing plan (1).

Taxes belong to unwanted, but from the law necessary costs of any enterprise. The logical effort of SMEs is to pay the lowest taxes and so maximize their net profit. This can be achieved by an efficient tax management, which is an integral part of the financial management. The tax management provides managing of financial processes from a tax perspective in order to optimize the tax burden of the enterprise. Tax management is one of the perspective directions how to improve the financial situation and competitiveness of small and medium-sized enterprises.

While financial a tax management is critical task for any size and type of company, it is especially critical for SMEs.

Based on our research, we found that the crisis had a negative impact on more than half of interviewed SMEs. Most companies felt this impact at the beginning of 2009. Over 50% of companies felt like the crisis had a major influence on their activities. They noticed significant decrease of revenues and limited access to external financing, especially credit financing. Some felt a pressure on price dropping, too. Lower return on investment caused problems with repayment of credit. Some companies became insolvent and had to use credit

to current account, or to increase owner's equity to solve this problem. It became more difficult for small companies to get bank approval of new credit. Only a limited number of SMEs were able to get financing through SZRB (Slovak guarantee and development bank), EXIM Bank, and micro-loan program.

### **Discussion - Measures in the area of financial and tax management of small and medium sized industrial enterprises**

In the current economic literature, there is a debate on the best practices for companies' financial management in a global financial and economic crisis. Based on our research we have following recommendations for financial and tax management of Slovak SMEs:

1. During the crisis, it is important for SMEs to **reinforce long term planning** and to **create and implement appropriate corporate strategy and financial strategy** oriented to the primary company goal of maximizing shareholder value. Corporate strategy involves a company's choice of business, markets, and activities, and thus defines the overall scope and direction of the business. Financial strategy is one of several functional strategies. It supports corporate strategy and adds financial aspects to all strategic decisions. Financial strategy helps to evaluate the available operational alternatives, and helps to monitor the implemented decisions. Such valuation and monitoring of operating decisions is important for increasing expected cash flow for the company.

2. To be permanently ready to cope with financial and economic crisis, SMEs need to **monitor the economic environment** and recognize any warning signals of critical changes in their environment. Not only do they need to pay attention to the comments and estimates of various rating agencies and international banks, but also they need to analyze the financial health of their suppliers, distributors, and customers. Results of this monitoring need to be transformed into key variables for the planning process.

3. SMEs should also increase focus on **cash-flow management**. In order to survive the crisis, SMEs need to stay solvent and to have adequate liquidity. This can be achieved by intensive collection of receivables, reevaluation of business terms with suppliers and customers, monitoring of financial health of creditors and clients, management of working capital, and restructuring of debt.

Slovak government has taken various measures to help SMEs overcome the financial crisis. There are financial programs available to SMEs, which support innovations and technology transfer with the goal to achieve higher energy efficiency, to increase the effectivity of production, and to lower ecological impact. SMEs can apply for financial help through an operational program called "Competitiveness and Economic Growth," or through founding programs sponsored by the European Union; for example, the Competitiveness and Innovation Framework Program, or the Seventh Framework Program for Research and Technological Development (4).

4. Most SMEs use financial ratios to evaluate their firm's performance and its financial position. These ratios help to analyze current and past conditions, and are a starting point for future planning. In order to predict future development, it is necessary to monitor and analyze **non-financial indicators**; for example customer satisfaction, employee satisfaction, retention of high quality employees, and innovation grade. These indicators can help with the long-term prediction of company development by pointing to existing strengths, and to new opportunities for business.

5. For companies facing a decrease in sales, liquidity, access to credit, and are otherwise struggling to survive during the financial crisis, it is important to **analyze and limit costs**. This implies the elimination of unnecessary processes, which don't add to the produced value. At the same time, keeping the quality of products and services high is critical during the crisis. This factor may separate successful companies from troubled ones. The use of product norms, norms for quality management systems, and attitudes toward quality improvement are various ways of satisfying customer demands and enhancing the competitiveness of the enterprise (2). SMEs can also revise supplier agreements, negotiate pricing, payment and delivery conditions; can optimize storing of materials and products, lower their number of employees, better manage working capital, strictly control direct costs, reevaluate fixed costs, use outsourcing.

Small and medium companies are trying to optimize their tax liability and therefore it is necessary to implement tax management in financial management. Key functions of tax management is to tax planning, making tax decision and tax organization and tax control, which are interrelated and each of them includes a number of tasks.

From our perspective, the effective tax management in enterprises is important to ensure following activities: definition of tax policy in enterprise, monitoring of actual legislation, keeping tax records, executing tax reporting and internal tax analysis.

SMEs can't usually afford from financial and personal reasons to have a separate function of a tax manager, for the large companies is not a problem. In SMEs should be clearly defined issues of tax management and combined them with the tasks of financial management in a company that can perform e.g. financial manager, economist, accountant.

## Conclusion

Indicators of Economic Development point to a growth in industrial production in the first half of 2012, especially in the production of vehicles. Slovakia has an open economy and therefore any fluctuations in foreign markets have an impact on our businesses. Small and medium sized enterprises are at greater risk and that's why they have to put emphasis on financial and tax management.

They need to implement a system of tools that will help them deal with current and future changes in business environment. We hope that our paper can be helpful in this process.

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**EQUIPMENT CATEGORIZATION AS A BASIS TO IMPROVE  
THE ORGANIZATION OF MAINTENANCE**

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**Abstract**

*Each enterprise must worry about its technical equipment. There are many concepts and strategies to improve the management of the maintenance, e. g. TPM, RBI, LCC, CBM, RCM etc. However, the basis for each one of these systems should be the equipment categorization. The purpose of categorization is to classify equipments according to the type of risk associated with their main function. This allows to focus attention on the parameters and the criteria used to assign the degree of risk when the equipment fails and to determine the proper method of maintenance.*

**Key words**

*Categorization, Maintenance Goals, Equipment, Maintenance Strategy, Solution Map*

**Introduction**

Maintenance of equipments is one of the most important components of the management of production services. The goal of the maintenance is to ensure that the realised investments would be able to create sufficient profit during their useful life. The important aspects of the competitiveness of the companies are reliability improvement, safety, as well as reducing the costs throughout the period of their technological usability.

But this improvement is necessary to do systematically. First of all, the company must regularly evaluate how the individual equipments are involved in the economic results of the company and classify them into categories according to how this equipments are important.

The general principles for the categorization of machinery and equipments are (1):

- a machine or equipment is put into the category that best describes its function type of construction, the nature of the operation, the useful life, percentage of serviceability, etc.

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- any classification of the machine or equipment to the category covers not only the machine or device that is completely made up, but also such a machine, which is pretty incomplete or unfinished,
- if it is determined that the machine or the equipment can be classified into two or more categories, then the category with most exact specification has priority over the categories with a general specification,
- if the machine, equipment, or production line consists of a different components, then the machine will be classify according to the component which gives it a decisive character and line will be classify according to the machines, which give it a decisive character.

### Category determination

#### *Category determination according to the dominant influence*

Each object, system, subsystem, or the machine can be included in categories depending which component of the production process has a dominant influence on, e. g.:

- safety,
- environment,
- production,
- and others.

The objectives of the maintenance for the above categories may be as follows (Table 1):

THE OBJECTIVES OF THE MAINTENANCE

Table 1

<i>Equipment Category</i>	<i>Objectives</i>
Objects that enhance safety and respond to danger.	Permanent emergency of the equipment, must be in operation as required.
Objects that are a potential source of a fire, or a potential source of personal injury.	The minimum number of failures, risk of developing a failure must be low.
Objects that have a direct impact on the quality and capacity of production.	Emergency based on analysis of the direct and indirect costs.
Other objects that do not have a direct negative impact on the environment, security, or production.	Minimum direct costs.

#### *Category determination according to the cost*

Parameter that was chosen to determine the significance of any category must reflect the overall objectives of category (1):

- **category Safety/Environment:** cost for safety, cost of removing the consequences of the breakdowns,
- **category Production:** cost to repairs, cost of lost production, cost of logistics,
- **category Others:** cost to repairs, cost of logistics.

#### *Category determination according to the effect on the production*

The method according to the effect on the production is another method of the category determination which is more subjective than method according to the cost. The procedure for this method is as follows:

In the first step it must be sorted out the equipment into the categories Safety, Environment, Production and Others. All equipment to protect the safety (signal or locking systems) must be included on the top of the list of significance. For category Production we calculate the direct cost of equipment repair, and indirect costs arising from the loss of production, then their sum shall be determined by the relative importance of production equipments. For category Others we calculate cost including the price of labor and logistics cost, and accordingly we assign significance (1).

### **The strategy for selecting the types of maintenance**

An interesting concept of strategic decisions about the type of maintenance was presented at the conference EUROMAINTENANCE. The method „Decision map“ was used as a technique to solve problems (2).

The concept has been implemented in three steps:

- Criterion analysis,
- Decision map,
- Decision support.

#### ***Step 1: Criterion analysis***

In this step is performed Pareto analysis of important criteria. Duration of the failure (lockout duration) as the main matter of the production and frequency of failures as a major maintenance issue. The aim of this step is to determine how bad are the worst-performing machines in a given time interval, e. g. one month. Selected worst of both criteria are classified into subgroups high, medium, low.

#### ***Step 2: Decision map***

The next step is to place equipment in decision map and accordingly to recommend decision on the choice of activities. In this map are shown characteristics of worst machines based on multiple indicators. The aim is to carry out such activities, which will lead to shift machines in the northwestern section where are low failure time and low failure frequency.

For the upper left section is the rule Operate to Failure (OTF) so use the maintenance type „fix-after-failure“. The rule for the lowest left section is to improve the skills, because the number of failures is high, but the duration of the disturbances is low. This means that the maintenance of these equipments is relatively simple and may be carried out by staff after training (SLU – Skill Levels Upgrading).

Problematic machines are machines located in the upper right section. Their failures are not frequent but if they are out of service, it means a big problem because its removal takes a long time. In that case it is appropriate to analyze the cause of the problem and then to monitor the status of the machine. There is applied Condition-based Maintenance (CBM). Machines, which are located in the lower right section, are the worst-performing machines in both criteria. These are the equipments that are more often in downtime than in normal operation. Equipments with these characteristics require change of the construction, thus, a

suitable type of maintenance is reconstruction (modification) – Design Out Maintenance (DOM) (2).

If some machines are characterized by the middle failure frequency and middle time of failure then the rule is to apply preventive maintenance – most widely used in the world is Total Productive Maintenance (TPM) (1).

		FAILURE TIME		
		low	medium	high
FAILURE FREQUENCY	low	OTF	TPM	CBM
	medium	TPM	TPM	TPM
	high	SLU	TPM	DOM

**Legend:**

CBM- Condition-based Maintenance

SLU – Skill Levels Upgrade

OTF – Operate to Failure

DOM – Design Out Maintenance

TPM – Total Productive Maintenance

*Fig. 1 Decision map (1)*

### *Step 3: Decision support*

Subsequently it is determined the cost of each proposed activity or expected savings of financial means after implementation of these activities. Every decision must definitely be endorsed and supported by the management company. On average, maintenance costs are in Western Europe 12-14 % of their gross domestic product. Costs arising from the fact that the implementation of each repair is associated with expending resources and the loss of a performance for which is an equipment intended (3).

### **The research results**

In the academic year 2011/12 was made an analysis of machinery and equipment in one large industrial plant. Machines are divided by sections and for each section was created categorization of machinery and equipment, which was in force since 2008. These were subsequently divided in accordance with individual sections. A number of machines was at each section which were classified according to categories (A, B, C). This classification was done generally for the entire enterprise.

Category C (within the entire enterprise) is machinery and equipment, which do not affect the quality of production and the production itself. Category C represents 22.30 % of the total approx. 13k machines and equipment. There is applied a Corrective Maintenance.

The category B includes those machines and equipment that are already relevant for the company (having impact on the quality of the production and operation of production). They make up the majority of the total number of machines and equipment, which is 48.25 %. The risk of failure in these machines is acceptable only in respect of a security issue and emissions. There is intended a Preventive Maintenance for a part of these machines and equipment. For other machines is not intended any type of maintenance, because for these machines and equipment is not always possible to identify the same type of maintenance.

Category A is 29.45 % of machinery and equipment which are essential for enterprise. They affect the quality of the products, operation of production, safety and overall production. Disturbances of these machines mean high risk of dangerous emissions and the risk of explosion and therefore threats to staff.

For this category A and part of B machines is not intended any type of maintenance, neither a strategy for how to deal with failures, prevention, general maintenance work. This machinery and equipment belonging to these two categories together represent 77.70 % of the total.

## **Conclusion**

After classifying under different categories and subsequently determining the correct maintenance strategy was evaluated that on the basis of changes in categorization could be save about 31.000 €, which represents 5.9 % of total maintenance costs in this industrial plant. However, there is required a systematic approach to managing maintenance of machinery and equipment.

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**THE CUSTOMER RELATIONSHIP MANAGEMENT IN TERMS  
OF BUSINESS PRACTICE IN SLOVAKIA**

Jana URDZIKOVÁ<sup>1</sup>, Martina JAKÁBOVÁ<sup>1</sup>, Sebastian SANIUK<sup>2</sup>

**Abstract**

*The aim of the article is to present the results of the research on focus on the customer in relation to the use of customer relationship management in selected business subjects in Slovakia. The main goal of the research is the mapping of current state to ensure the principle of customer orientation and utilizing of CRM in organizations and industrial enterprises in Slovakia. This is the mapping of the current situation of that problem in practical conditions and determines potential opportunities for improvement.*

**Key words**

*Customer, Customer relationship management, Business subject*

**Introduction**

Customer relationship management (CRM) is a widely implemented model for managing a company's interactions with customers, clients, and sales prospects. It involves using technology to organize, automate, and synchronize business processes—principally sales activities, but also those for marketing, customer service, and technical support. The overall goals are to find, attract, and win new clients; nurture and retain those the company already has; entice former clients back into the fold; and reduce the costs of marketing and client service. Customer relationship management describes a company-wide business strategy including customer-interface departments as well as other departments. Measuring and valuing customer relationships is critical to implementing this strategy (Customer relationship management, 2012; Prajová, 2011; Witkovski, 2009; Horová-Taušl Procházková, 2011).

History of CRM goes back to the 60-ties when the ability to win and keep customers became one of the key factors of successful business. CRM as a philosophy gained ground in

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the 80-ties. Since then, it has experienced great development. Situation in the field of CRM copied the development all over the world as well as in Slovakia and other countries of Middle and Eastern Europe. In this period of time, most of the large companies were in the phase of general restructuring which was often connected with consolidation and centralization or organizational units and supporting systems. Enterprises gradually realized the importance of building and sustaining the long-term beneficial relationships with their customers. Significant development of CRM has mainly occurred in the last few years. In a large extent, it is related to the arrival of foreign enterprises that introduced CRM standards. Nowadays, every enterprise that wants to survive on the market, and grow eventually, has to solve the problem of satisfying the individual needs of customers and sustaining the long-term beneficial relationships with them (Jakábová, 2012; Mišák, 2011). Adopting CRM brings the knowledge that long-term relationships with customers are among the most important assets of each enterprise providing better profitability, competitive advantages, stabilization of endangered relationships with customers, reaching the customers' satisfaction with the complaints, elimination of negative advertising and sustaining of positive image, reduction of distrust and potential conflicts etc. (Jakábová, 2012; Urdziková, 2010)

This paper is focused a brief overview of the current status of CRM in Slovak companies – focused on customer field.

### **Customer relationship management**

Any business entity that wishes to achieve a desired level of success must react flexibly and effectively to changes taking place in the marketplace. Only the customer will determine which products are of good quality and therefore which business entity is competitive. The customer is a dynamic force who, via his or her behaviour, allows effective production without losses and without holding excessive stock. Therefore, the main aim of a successful organisation is satisfying customer demands. A way to keep customers leads through customer relationship management.

It's easy to say customers are our most important asset but turning customer relationship management (CRM) strategy into bottom-line results is hard work. It means winning the battle for customers' hearts and minds every day, with each interaction at every customer touch point.

Long-standing relationships only arise from trust gained over many transactions and by customers' belief that the company wishes to keep them around rather than drive them away.

Creating a customer-focused company starts with the definition of a CRM strategy, which must then be filled out with new work processes, organizational changes, and even a revamped corporate culture.

To create customers for life, customers who will become advocates with the perception (and don't forget that perception is reality) they need to believe that you do what's best for your customers, not just what's best for your bottom line (Hill, 2012).

Customer relationship management problem is very wide and it is considered one of the elementary means of the enterprise's competitiveness. It reacts to the fact that the main source of all gains and profits are the customers, not the products. CRM refers to "Customer relationship management" and this abbreviation is often used in the Slovak and Czech literature. However, it may sometimes be confusing. Majority of authors explains this notion as Customer Relationship Management. Part of them understands this abbreviation as

Customer Relationship Marketing. Others, who claim that not all customers necessarily want to build a relationship with their supplier, prefer to use only the phrase „Customer Management“ (Jakábová, 2012; Kubindová, 2009; Mišák, 2011; Urbán, 2011). Following the aforesaid, it is obvious that CRM is focused on customers. This paper will also use the abbreviation “CRM” in the meaning of Customer Relationship Management.

Generally true and respected definition of CRM does not exist. CRM definition is still not quite clear, because it is interpreted in several ways that are different in their point of view. According to the literature, the CRM definition can be specified as follows:

V. Chlebovský (2005) defines CRM as an interactive process with goal to reach the optimal balance between the business investment and satisfying the needs of customers. Balance optimum is determined by maximum profit of both sides and assumption of reaching the optimum is creating of long-term partnership relationships with customers. As the most complex definition is considered the approach of J. Dohnal (2002) who understands CRM as systematic providing of quality services by means of all available business channels. Others see CRM as a supporting technology, it means communication and software. Others understand CRM as an effort to provide particular information by employees that are in daily contact with customers (Jakábová, 2012; Kubindová, 2009; Urbán, 2011).

Different view over CRM has been brought by H. Wessling. According to H. Wessling (2003), CRM means active creation and sustaining of long-term beneficial relationships with customers. Communication with customers is secured by suitable technologies that present the very processes with added value for shareholders and employees of the enterprise. Moreover, H. Wessling underlines the integrative function of CRM as a complex organizational unit superior within the enterprise structure by several departments. He also emphasizes the need to separate the functional definition of CRM from the institutional one. (Jakábová, 2012; Kubindová, 2009; Urbán, 2011; Wessling, 2003).

F. Buttle (2004) defines CRM as the core of business strategy that integrates by internal processes, functions and external network for creating and supplying of the values for target customers. It is based on high quality data concerning the customers with the support of information technologies.

Following these definitions, it is obvious that CRM is not primary only technological matter – it is not possible to solve it only by using the set of IT supporting tools, implementing of the software or buying the most modern telephone exchange. It is necessary to set the new processes in order to gain confidence in customers and keep the customer or product supply. Moreover, it is keeping of permanent clients; it means keeping the customers and offering the products that these customers need. It is a process that must be completed by every enterprise which wants to be successful on the market. In case that the enterprise does not manage to carry out the aforesaid and if its management does not understand that CRM is firstly the way (strategy) of behaviour towards customers, neither solutions, however good, will help with its implementation and effective functioning. Any methodology, method or technique and tool are good and effective only to the extent to which the person manipulates with them (Jakábová, 2012; Mišák, 2011; Urbán, 2011).

### **Obtained results of research - the current state of the CRM in Slovak business subjects**

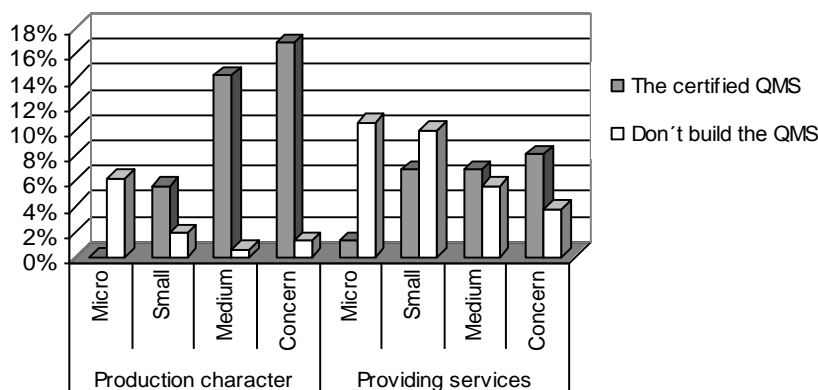
A picture of how customer focus and customer relationship management are applied in Slovak organisation and enterprises is given by the results of a research carried out in 2010

and 2011 at the Slovak University of Technology in Bratislava; Faculty of Material Sciences and Technology in Trnava; Institute of Industrial Engineering, Management and Quality.

Its subject matter presented the mapping of the system current state to ensure the principle of customer orientation and protection of his rights organizations and business subjects in Slovakia. This is the mapping of the current situation of that problem in practical conditions and determines potential opportunities for improvement.

Approximately 400 business subjects on the Slovak market were addressed within the research. The selection surveyed of respondents wasn't limited, it was a random choice, because we had effort to address the widest possible group of businesses. Return completed questionnaires was 65.5 %.

Concerning the subject of business, the sample consisted of 45 % business subjects of production character and 55 % of those providing services. One of the important steps was to find out if the business subjects joining the research built the quality management system (QMS) according to the international standard ISO 9001 (see Graph 1).



**Graph 1.** Visualisation of the business subjects from the quality management system point of view (source: Urdziková, 2010)

In the research participated 30 % of respondents from micro-enterprises, 27 % respondents from small enterprises, 32 % of respondents from middle-sized enterprises and only 11 % of respondents from large enterprises with the number of employees over 250. From the total number of enterprises, only 7.9 % of micro enterprise dealt with the CRM problems.

Research results were obtained with the help of different scientific methods of acquiring and processing data, SPSS software and using the comparative analysis they were compared with the results arising from previous researches that had formed a part of the research projects realized at the Institute of Industrial Engineering, Management and Quality; Faculty of Materials Science and Technology in Trnava; Slovak University of Technology in Bratislava, Slovakia (FMST SUT; the scientific grant project VEGA No. 1/0103/03 “Monitoring customer satisfaction in quality management and marketing” – 2003-2005 and No. 1/7162/00 “The quality of the communication system as a factor affecting competitiveness of SMEs” – 2000-2002), as well as researches conducted at other universities in Slovakia.

### ***Focus on the customer***



Customer presents the essential part of the market mechanism functioning. Moreover, he also presents the determining factor of forming the competitive environment for business subjects operating on the market (Jakábová, 2012; Kubindová, 2009; Mišák, 2011).

According to the complaints management problem, it was interesting to find out the condition of business subjects operating on the Slovak market, because the complaints management has to be closely connected to the application of the customer focus principle. If it be to the contrary, it is not possible to speak about the complaints management.

Then, it is only considered to be the obligatory meeting of the legislative requirements of the Slovak Republic and the European Union (EU) concerning the complaints handling.

The analysis results on the subject of the customer focus principle application are presented in the table 1, where the significance of differences in the distribution of business subjects' answers in individual features of examined categories is formulized. In time of the analysis, the strengths of the business subjects were proved and the improvement opportunities were revealed.

Strengths arising from the results of the analysis concerning the current state of the customer focus principle application:

- greater part of the business subjects is customer focused; this is also proved by the fact that they perform activities to support the customer focus;
- there are no significant differences in application of customer focus principle among the business subjects with different subject matter.

Improvement opportunities arising from the results of the analysis concerning the current state of the customer focus principle application:

- revealing the significant differences in application of the customer focus between the business subjects with the certified QMS and those that have not built the QMS. These differences result from the incorrect understanding of the principle mentioned above and they also reflect in the absence of the steps heading to the customers retention;
- differences between the business subjects considering the length of their operating period on the Slovak market which occurred during the activities related to the customers retention;
- different approaches in the application of the customer focus principle among the business subjects depending of the size;
- decline in the trend of customer focus principle application by approximately 10% that can be caused by the world economic crisis.

FORMULATION CONCERNING THE SIGNIFICANCE OF DIFFERENCES BETWEEN VARIOUS CATEGORIES OF SORTING FEATURES IN APPLYING THE "CUSTOMER FOCUS" PRINCIPLE (source: Urdziková, 2010)

Table 1

REQUIREMENT	SUBJECT OF BUSINESS	DURATION OF ACTION IN THE MARKET	SIZE BY NUMBER OF EMPLOYEES	QMS
Priority management – focus on the customer				*
Definition and identification of external customers			***	
Customer care program		*	***	**
Responsibility of a customer care				

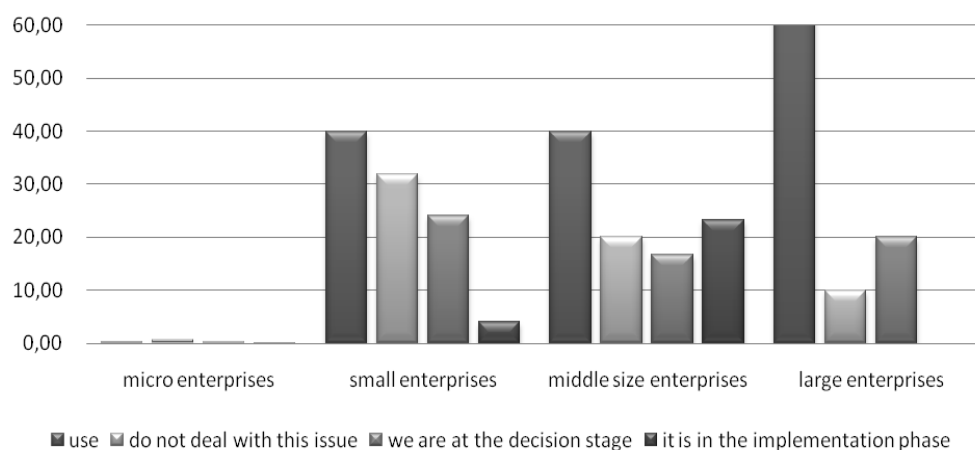
The top management is important information about customer feedback		*		**
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Comments: \*\*\* Very high significance, \*\* High significance, \* Significance, - Don't significance.

### ***The level use of CRM in practice***

Customer relationship management has the potential for achieving success and growth for organizations in the nowadays environment of extensive competition and rapid technological development. CRM enables organizations to know their customers better and to build sustainable relationships with them (Khalid-Haslina-Huda, 2011). Research was focused mainly on examination of the current state of CRM utilization in business subjects (mainly industrial enterprises) in the Slovak Republic. Research results also confirmed the positive development of using CRM in micro enterprises (see Graph 2).

These results showed that there were also such enterprises which were implementing CRM at the time of the research or they were deciding to implement it in near future. As the greatest advantage of CRM, they considered trouble free running of business processes and more individual contacts with the customers. Their level was characterised mainly as centric and segment (division according to Kopřiva) and under the term CRM they understood the address book of customers with contacts or information system. For better access to information on customers, they mostly used the electronic file. When implementing CRM, the micro enterprises experienced great problems with the absence or insufficient formulation of CRM strategy. They did not deal with performance monitoring and that is why the majority of them could not estimate the satisfaction with CRM system. Unlike the micro enterprises, 40 % of respondents coming from small enterprises used CRM.



**Graph 2.** *The current state of using CRM in industrial enterprises in Slovakia (source: Jakábová; 2012; Urbán, 2011)*

In time of the analysis, the strengths of the business subjects were proved and the improvement opportunities were revealed.

Strengths arising from the results of the analysis concerning the current state of the CRM:

- greater part of the enterprises use CRM strategy; as well as IT supporting tools and techniques;
- as the greatest advantage of CRM, they considered trouble free running of business processes and more individual contacts with the customers;

- Improvement opportunities arising from the results of the analysis concerning the current state of the CRM;
- it is possible to say that the enterprises in Slovakia showed greatest deficiencies in monitoring of their CRM performance;
- majority of enterprises regardless of their size could not estimate the satisfaction with actual functioning of CRM strategy;
- respondents from enterprises pointed out to the fact that CRM is usually mistaken and it is considered only a technical matter.

## **Discussions**

Modern trends in the field of customer relationship management bring new ways how to use better the tools to reach high system productivity and improvement of enterprise financial performance (Saniuk-Saniuk, 2010). In constantly changing market environment, enterprises have to use modern methods, techniques and ideas of management. At the same time, they need to learn how to implement these to the practice (Witkowski, 2009). Implementation of CRM in enterprises should bring positive effect mainly by increasing the number of loyal customers, optimizing cost of sales activity and so increasing the competitive advantage. Increase in value of customers should reflect on the increase of overall profitability of enterprises. Regular evaluation of customer relationships undoubtedly contributes to successful CRM functioning. Following the research results, it is possible to say that the enterprises in Slovakia showed greatest deficiencies in monitoring of their CRM performance. Majority of these enterprises focused on monitoring of financial indexes. On the one hand, these indexes give the real view of achievements or failures in the past, but on the other hand they do not enable to predict the future. Moreover, majority of enterprises regardless of their size could not estimate the satisfaction with actual functioning of CRM strategy. Research further pointed out that 50 % of micro enterprises used electronic file using MS Office in spite of the fact that this system does not enable documents administration, analytic or statistic tools, or automation of reports.

Following the research results and the analysis of collected data, it is obvious that customer relationship management in industrial enterprises is well-developed. However, there are some gaps that could be eliminated. Greatest negatives were found during measuring of the CRM performance in all enterprises regardless of their size. Another problem found was the absence of a quality information system in micro enterprises that would definitely make the employees' work and communication with customers easier.

## **Conclusions**

In today's highly competitive environment, an increasing number of companies have realized the importance of becoming more customer-centric. They invested a large amount of time and resources in a Customer Relationship Management. However, it is increasingly more difficult for companies to know how to retain an existing customer and even harder getting new one. It is six to seven times more expensive and time consuming to gain a new customer than to keep an existing one. Not only the price is no longer critical, customers are changing their expectations and behaviour. They can easily compare the prices and change the plan from whom to buy at a minimal cost. This puts increasing demands on companies in the area of customer care and customer service. One of the ways to retain customer base and to ensure recurring purchases is adjusting to meet customer's needs, ensuring its satisfaction – customer

must be at the heart of company interests. Appropriately selected IT solution of CRM can help them. Despite this fact, the majority of companies still don't use correctly all the possibilities which CRM offering or many implemented CRM projects failed to be successful. The problem is that these companies often do not know why they were not successful. Other companies will make the same mistakes if these failures are not recognized.

It becomes a matter of fact that the implementation of CRM initiatives and programs have faced with failure over different industries and businesses. In addition, the understanding of CRM and its different aspects like definition, scope, processes, and technology is still limited and shallow. The previous discussion of the fundamental theory of the CRM processes is very important to strengthen the understanding of CRM, before planning for the adoption and implementation of CRM initiative. The understanding of the main components of any CRM initiative is very essential for its success. People, technology, and process are the three main components of CRM (Jakábová 2012).

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## **EDUCATION CONTROLLING – OVERVIEW AND STATUS**

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### **Abstract**

*In line with shrinking budgets for continuing vocational trainings, the importance of educational controlling is growing more and more. Which criteria and aspects should be taken into consideration when establishing a sustainable educational controlling? What is the status quo in Austrian companies in terms of educational controlling? This article gives an overview about educational controlling in literature and shows results of a survey of Austrian companies.*

### **Key words**

*Management, Controlling, Education*

### **Introduction**

Continuing education is seen more and more as investment, and a possibility to gain additional know-how. A study of the Austrian “Institut für Grundlagenforschung” in 2008 showed that 64 % of the companies would support their employees with additional vacation, 59 % would provide financial support for the employees' education.

The economic crises necessarily leads to extensive economies. The budget for continuing education is driven by variable costs and therefore often falls victim to budget cutbacks.<sup>1</sup>

Economic crises lead therefore to necessary of target-orientated controlling for continuing education.

This article will give a definition of education controlling, an overview of education controlling in literature and presents the results of a survey of Austrian companies, which want to give a picture of the status quo in selected Austrian companies, of education controlling.

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<sup>1</sup>Cf. Kurz- und Mittelfristige Auswirkungen der aktuellen Wirtschaftskrise auf die Personalentwicklung, Zoch Thomas/ Schulz Doreen/ Koukoudis Apostoles/ Holdbrook Harold, Grin Verlag, 2011, p. 77

## **Education Controlling – Definition**

### ***What is continuing education?***

“Education Controlling“ contains measurements of companies, which are only focused on their employees and organised as well as financed by the companies themselves.<sup>2</sup> Günter Albert defines education controlling in context with the definition of human resource development<sup>3</sup>:

- Every measurement,
- which wants to support employees in their career,
- in teaching and transferring the appropriate qualification,
- to bear up a better sensitivity for current and future tasks,
- in adjustment with personal interests.

There are several definitions which can be applied, especially in comparison to off-the-job trainings, advanced professional trainings and extended vocational trainings<sup>4</sup>, but this is not a focal point or an objective of the following article. Albert defines the goals of continuing education as follows

#### Goals of the company

- to utilise the potential of skills
- autonomy of the job market
- improved corporate image
- to create qualification in consultation with the requirements
- to realise technical development
- consideration and flexible employees
- Education: to shape employees who are independent, decisive and willing to take responsibility

#### Goals of the employees

- motivation
- support in finding the right educational programme
- a better mobility all over the enterprise and beyond
- lower risks to be made redundant
- personal fulfilment

### ***Education Controlling***

Initial ideas of education controlling already came up in the 1950's in the USA, when Donald L. Kirkpatrick developed the Four-Level-Education-Model: (1) Reaction – what did the participant think about the course/training? (2) Learning – did the participant gain additional know-how? (3) Behaviour – was it possible to transfer new knowledge to the job? (4) Results – what was the final benefit for the employee and the employer because of the attendance of the course/the training?

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<sup>2</sup>Cf. Falk 2000: p. 161

<sup>3</sup>Cf. Albert 2009: p. 126

<sup>4</sup>Cf. Breiter 2009

The first model for education controlling in the German-speaking-world was developed in 1983, Bronner and Schröder started their research with “Erfolgssteuerung in der Weiterbildung” (Success-Control in Education)<sup>5</sup>.

The number of Models, Articles and Research studies was rapidly rising within the last decade. When dealing with matters of education controlling, it is necessary to differ between two principal directions: (1) Education controlling in continuing education and (2) Controlling in education companies, the first deals with the controlling of lectures and events within education programmes, the second is more likely a financial controlling system customised for companies of the growing business area “continuing education”.

All in all, it can be said that literature of education controlling basically deals with the same topic as financial controlling does: Planning, Informing, Analysing, Examining and Controlling<sup>6</sup>.

The Planning-Data derive from the guidelines and targets pre-defined by the education institution. In accordance with these data, all controllable processes can be measured and the assessable processes within controlling can be estimated within these scheme-/target data.

The Education Controlling provides Information for the Management about key figures, indicators and parameters. The parameters derive from defined processes; they include information about the planning of an educational measurement as well as the output. Finally, based on real-data, certain variations can be specified in comparison to planning-data.

### ***Distinction of the term “education controlling”***

Education controlling is specified by its complexity and numerous aspects. It ranges from controlling of single trainings to a whole management-tool for education companies. This paragraph wants to give an overview about the dimensions of education controlling and its difference to evaluation, quality management and some related fields.

#### Duality of education controlling<sup>7</sup>

Education controlling should bridge economical controlling matters with pedagogical aspects. The economical field is covered by financial controlling tools like budgeting, well-known key figures and indicators. These controlling-tools are not related to educational affairs, therefore we have to add this controlling-system to related pedagogic aspects<sup>8</sup>. We are in need of indicators to measure the qualification of teachers, learning efficiency, information about the success of implantation of new know-how and much more.<sup>9</sup>

#### Strategic Education Controlling versus operational Education Controlling<sup>10</sup>

Education Controlling is based on defined company targets. The definition of short- and longterm targets leads us to differ between operational and strategic controlling actions. Operational Education Controlling deals with short-term targets, a time horizon of up to one year, strategic Education Controlling handles actions and measures with concentration on mid- and longterm targets, so the time horizon is up to three years. The strategic controlling focus is on operations of the entire enterprise

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<sup>5</sup>Cf. Schöni 2006: p. 18

<sup>6</sup>Cf. Schöni 2006: p. 36 ff.

<sup>7</sup>Cf. Breiter 2009: p. 30 ff.

<sup>8</sup>Breiter 2009: p. 30

<sup>9</sup>Cf. Schöni 2006: p. 37 ff.

<sup>10</sup>Cf. Breiter 2009: p. 33 ff.



### Quantitativ versus qualitative Education Controlling<sup>11</sup>

The quantitative Education Controlling deals with figures and parameters that are measurable. Quantitative Controlling instruments like Budgeting, Expanding for Continuing Education are in direct relation to selected areas which should be stated.

The qualitative Education Controlling covers all instruments that want to give information about cost- and success drivers that could hardly be measured with figures and numbers, for example changes in employees motivation or the success in implementation of new know-how.

### Education and its environment<sup>12</sup>

Education and continuing education is influenced by various matters. Education politics, trends, the situation of the labour market, official guidelines are important factors besides the demand of the target group.

### Qualitymanagement and Evaluation versus Education Controlling<sup>13</sup>

Schöni defined key questions to answer the questions about the difference of quality management, Evaluation and Education Controlling:

- Evaluation: „Evaluation asks for the quality: What is the quality of the learning opportunity, the service provider, the education institution?“
- Quality Management: “How can we guarantee that quality and effectivity of all processes of the learning opportunity, the service provider, the education institution gets measured and developed regularly?“
- Education Controlling: “Education Controlling asks for the overall controlling of all processes: What is the quality and quantity of all education activities and services? How can we measure and control all areas of influence.

### Education Company versus Education Departments

Education Controlling is a matter for all institutions and facilities, which are dealing with education and trainings, either we speak about (1) Education Company or about (2) education departments. To find a suitable controlling-system, it is most important to differ between these two different organisation forms, because of the need to know, how far and in which fields processes can be influenced.

- An Education Company is a private or public institution providing education programmes for specified target groups to meet the interests of their customers and clients, trends on the market and official guidelines.“<sup>14</sup>
- An education department is a department that acts by order of its institution/organisation/company. The education programmes empowers employees to manage their tasks better.“<sup>15</sup>
- Education companies and Education departments differ in following areas.
  - Education Departments are led by strategic targets of the company.

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<sup>11</sup>Cf. Breiter 2009: p. 34 ff.

<sup>12</sup>Cf. Schöni 2006: p. 37 ff.

<sup>13</sup>Cf. Schöni 2006: p. 55

<sup>14</sup>Schöni 2006: p. 39

<sup>15</sup>Schöni 2006: p. 39

- Education Departments have to report to the next level/ the company in all matters.
- The Education Programme is strongly influenced by the order situation of the company.
- It is hardly possible to find benchmarks to compare service/costs and success of the education programme, because of the fact that education programmes are tailor-made to the own company.
- own company.

### **Controlling models for further educational programmes**

#### ***Four-levels-model by Kirkpatrick***

The four-levels-model by Kirkpatrick is one of the first working papers in the research field of education controlling and was established in the 1950ies. It consists of:

- (1) Reaction: Kirkpatrick subsumes the customer satisfaction, which are measured by surveys. Basically it is about appliance of evaluation. „Are the participants happy with the conducted training?“ Educational institutions often run evaluations, for that reason data often exists. Kirkpatrick emphasises on the importance of obtaining the reactions of participants in the following way: „In a situation where they pay, their reaction determines whether they attend again or recommend the training to others from their institution. [...] Reactions of participants should be measured on all programs for two reasons: to let the participants know value their reaction, and to measure their reactions and obtain suggestions for improvement.” (Kirkpatrick/ Kirkpatrick 2005, 5).
- (2) For Kirkpatrick the obtaining of reaction is important for two reasons: (1) The participants should become aware that their view is important, even for progression, and (2) these reactions should provide the basis for further improvement.  
After all the reactions of participants for fee-based educational institutes determine whether they would participate in a course again and whether they would recommend it.<sup>16</sup>
- (3) Learning: Kirkpatrick defines Learning as the immediate result of the education schemes, the success rate, which is measured by tests and surveys. „Which tasks and how well was learned by the participants?“ (ibid.)  
“Three things can be accomplished in a training programme: (1) Understand the concepts, principles, and techniques being taught. (2) Develop and/or improve skills. (3) Change attitudes.”<sup>17</sup>
- (4) Behaviour: It has to do with the achievement of transferring the newly gained knowledge to practical experience. „Do participants apply the newly gained knowledge to their work area?“ „Measuring behaviour change is necessary, not only to see if behaviour has changed, but also to determine the reasons why change has not occurred” (vgl. ebd., 6). Kirkpatrick outlines that the achievement of transferring the newly gained knowledge to practical experience is a key success factor. Therefore, a considerable data base is needed. Kirkpatrick recommends that surveys before and after the training should be analysed. For the data collection superiors, employees and work colleagues can be appointed. The survey should be repeated regularly.<sup>18</sup>

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<sup>16</sup>Cf. Brauwer 2008: p 65 ff.

<sup>17</sup>Kirkpatrick, J. D./ Kirkpatrick, D. L. 2005: p. 65

<sup>18</sup>Cf. Brauwer 2008: p. 65 ff.

- (5) Results: Kirkpatrick defines Results as qualitative results of the implementation of gained knowledge into the praxis. „Results could be determined by many factors including less turn over, improved quantity of work, improved quality, reduction of waste, reduction in wasted time, increased sales, reduction in costs, increase in profits, and return on investment (ROI).“ It is all about specific impacts of the training on turnover, work efficiency, quality of work and the like. (ibid.)

### ***ROI-Approach by Phillips***

‘Phillips’ approach is based on Kirkpatrick’s work and adds a fifth item: Return on Investment. Phillips attempts to assess the success of education with numbers, which is a very controversial attempt within education controlling. The formular for the ROI of educational trainings is as follows:<sup>19</sup>

$$ROI(\%) = \frac{\text{benefitsofthetrainng} - \text{costsofthetraining}}{\text{costsofthetraining}} \times 100\%$$

If ROI = 130 %, for each invested Euro a return of 1,30€ (net) was achieved. If ROI < 100%, the investment exceeds the return (vgl. Phillips/ Schirmer 2005, 31). The crucial question is the identification of the benefits of the training. Therefore, Phillips selected a 9-level process. Levels 1 to 4 conform to Kirkpatrick’s model. Levels 5 to 9 apply to quantification respectively to qualification of the benefits of the training. Data are assessed before and during the training, compared and effects are finally isolated to be financially evaluated and used for the index calculation. Possible paramters could be, for example reduction of extra hours, efficiency enhancement of process operations, low error rate (ibid.)

### ***VOI-Approach by Kellner***

Kellner and his team of „The Institute of Training and Development“ added a sixth level to Phillips’ adapted Kirkpatrick.model: The Value of Investment. Kellner notes that the success of the educational training by Phillips could appear negative, which could have positive effects from a macroorientated point of view, which could exceed the investments of the educational training. Kellner beliefs that in a sixth step the benefit of training for all participants has to be identified, to be made concrete and to be described in detail. The realized benefit can be provided with a certain value. The sixth level corresponds from a intermediate to a long-term measurement of qualitative results of educational trainings<sup>20</sup>.

### **Desscription of arrangements to control trainings activities within selected enterprises**

A non-representative survey within selected Austrian industrial companies tells that extended vocational training becomes more and more important to the companies. Participants were HR of Alpine Bau GmbH, the second largest building enterprise within Europe, Andritz AG, a leading Austrian plant construction firm, Binder & CO GmbH, a growing machinery installer and largest employer of the region Oststeiermark, Sappi AG, a leading paper production company.

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<sup>19</sup> Cf. Phillips/Schirmer 2005

<sup>20</sup> Cf. Krauß, 2008 (p. 26 ff.)

According to the criteria for demarcation, which are outlined under point 3, we deal with quantitative and qualitative instruments of education controlling in training sectors of companies.

The status of analysis of further educational training based on the four-levels-model by Kirkpatrick (Point 3.3.1) and added by the term „needs survey“, can be outlined as follows:

- Assessment of demand

The identification of needs is based on staff appraisal. The immediate superior identifies training requirements, the decision on further educational training is to be made by the management. For each employee a competence profile will be created, within these competence profiles qualifications and competences of the employee will be noted, and compared with the requirements of the job-description. In this way, a considerable overview of the company's qualification level should be given. The most common method of dedicating the training needs is the personal dialogue between employee and superior. The certain education training will be chosen based on the current duties or the results of the staff appraisal.

- Reaction

The reaction of the participants of educational trainings will be collected through an evaluation questionnaire or through personal discussions with the superior. All companies indicate that the reactions will be forwarded to the training institute and will influence the further progress of the courses.

- Learning

There is no assessment of training success like tests or oral examinations. Exceptions are certification processes, where upgrade training course become certification processes and as a result the benefit can be clearly detected.

- Behaviour & Results

All interviewed enterprises indicated that staff appraisals told them whether employees could apply the newly gained knowledge from training courses to practice or whether changes in the work result thereby could be identified.

- Return

The measurement of the monetary success of further educational training is very challenging and is hardly made. It is attempted to outline the monetary success by obtaining feedbacks from the participants. Employees/participants are asked for projects, which have profited from the further educational training like saving of time, reduction of costs or increase of turnover.

In another step, this monetary success could be set proportional to the applied training costs. In this way, the Return on Investment of the educational training could be calculated.

## **Conclusion**

Vocational further training becomes more and more important to businesses. Crisis and budgetary bottlenecks put more pressure onto expenses for vocational education. Therefore, the development of special controlling instruments is a vital need. This two different target groups must be taken into account: (1) Education institutes respectively (2) training departments of businesses. These target groups differ in strategic controlling opportunities. Despite

intense development in the literature market of education controlling in the last ten years, most approaches base on the 4-levels-model by Kirkpatrick from 1950 (assessment of demand – Reaction – Learning – Behaviour).

A survey of representative Austrian companies 2012 indicates that this model is partially implemented. The assessment of demand is realised by most companies by personal appraisal interviews and noted in an company competence development profile.

The reactions of participants of educational trainings will be collected by all companies by evaluation sheets or by personal dialogues with the superior. However, an information back flow to the superior is rare. Assessments of training success are rarely conducted, exceptions are special educational trainings, which conclude with certifications and audits. The success of the advanced training will be measured by appraisal interviews, held after the conducted training.

To sum up, it can be said that selected controlling instruments are applied to vocational education and training. Especially the determination of success of further education is in the early stages of development. The qualification of the success of further education would be a giant stride towards professionalisation of education economy.

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## **THE PARENT CONTROL IN THE MECHANICAL ENGINEERING MANAGEMENT-HOLDING**

Jana ŠNIRCOVÁ<sup>1</sup>, Petra HODULÍKOVÁ<sup>2</sup>, Peter JOEHNK<sup>2</sup>

### **Abstract**

*The group of entities under the control of parent, so called holding, is arisen as the result and the most often used form of the business concentration nowadays. The paper is focused to find special tasks of parent company for to preserve effective unified economic control in the management-holding. The unified economic control the holding exists in the conditions of the main conflict of interest - holding is not a legal but economic unit and the connected companies into it have a legal autonomy with the economic dependence. The unified economic control limits the financial independence of every individual company of the holding. The attention in the paper is concentrated to the management concept of the parent control, i.e. the parent company supervises the control of intragroup flows and all of subsidiaries production activities.*

### **Key words**

*Management-holding, unified economic control, parent company, intragroup flows*

### **Introduction**

According to the conflict of the interests i.e. the holding is not a legal unit but an economic unit in which there exists an economic dependence between connected companies, takes place the unified economic control, which is in the frame of the holding necessary. This unified economic control limits the economic independence of every individual company of the economic unit, and it is in fact one of the most important attributes of the holding. There is an active and noticeable influence of the parent control on all of operations and activities of subsidiaries in the mechanical engineering management-holding. Plentiful intragroup flows are quite typical for this type of holding; their reflection is found in the consolidated financial statements.

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## Expression of the economic life of the holding

More significant to the capital connection of companies is to realize intragroup relations and flows which take a place between companies of the holding. The intragroup relations and flows are a key determinant of the financial situation of all individual companies. Their targeted control contributes to the increasing of a holding's worth as a whole (1). In the management-holding is the control performed by the directive parent influence; the management of parent company operates to the subsidiaries activities very intensive. The parent company as a control top of the mechanical engineering management-holding implements many decisions, therefore the large intragroup relations and flows are in this type of the holding more than expected. An intensity of the intragroup flows is in the mechanical engineering management-holding very high, because of the high intensity of parent directives. But their character is determined by the number of individual companies of the holding as well. All intragroup flows are expressions of the life of the group. They are flowed naturally from the relationships which are arisen between connected companies. The intragroup relations and flows on the one side, give the need for the unified economic control, while on the other side, the unified economic control enables control of these relations and flows. The unified economic control by the authorities of the parent company and close cooperation between the companies is a tool of synergism and is a basic attribute of the holding. Then the mechanical engineering management-holding can reach the economic efficiency, high competitiveness, capital strength and financial stability.

### Regulation of the intragroup flows in the mechanical engineering management-holding

Through the intragroup flows, the parent company can reallocate capital to the place of the most effective use. According to *Šnircová* (2) this is considered one of the main motives for the establishment of the holding and it is also the tool of achieving synergism in this form of business. The types of the intragroup flows of capital are contained in the Table 1. In the addition to the traditional financial intragroup flows in the mechanical engineering management-holding are widely used **the intragroup flows of the business type**; because there is most of the time the quite intensive collaboration between connected companies to the engineering management-holding. (4) Business transactions- the flows represent intragroup relations between suppliers and subscribers; the flows arise from internal operations of input purchases and output distribution between connected companies into the holding; the parent company can influence the financial results of companies connected to the holding; the parent company has a possibility to determine suppliers and subscribers of companies, prices of business transactions, a currency of business transactions, conditions of the provided credit etc. (5) Mutual collaborations- there are the technical, technological and administrative collaborations between companies connected to the holding (rent of technical devices, general and leasing charges, rent, personal rental, provision of licenses and technological procedures, etc.); the parent company can to determine a price of a rent, a technical fee, payment conditions etc. (6) Transfers of investment property- there is a cession of investment property (e.g. machines, buildings) by the form of a selling (important is the price of transaction and payment conditions) or a physical deposit as a capital share by the form of giving.

Financial type of the intragroup capital flows		Business type of intragroup capital flows
Specific flows only for the holding	General transactions between companies	General transactions between companies
(1) Transactions with the equity in the frame of the holding	(3) Internal loans between holding's companies	(4) Business transactions
(2) Movements of the capital by the way of dividends		(5) Mutual collaborations
		(6) Transfers of investment property

The aim of the unified economic control is to gain a positive financial situation for the mechanical engineering management-holding, to gain economic advantages that follow from the financial situation and to guarantee the ability to pay and profit from subsidiary companies. The financial control includes a coordination of financial resources and also allocation of them just by way of the financial control system. **Lutter** (1) defined „*the purely isolated financial control of the companies which are connected to the holding has no sense; it is neither objective nor adequate. The consolidated view of the financial situation is primary for lenders and investors, suppliers and possibly also for customers.*” Stakeholders and shareholders acquire this view through the consolidated financial statements. An aim of it is to present the financial situation and profit of the engineering management-holding as the whole group of entities under the control of the parent. The connected companies into the holding are represented then so-called consolidated unit. „*The consolidated financial statements are important documents, which are presented the results of the economic unit, e.g. which shareholders' aims were achieved and what is the financial position of holding towards stakeholders*” (3).

### Directive influence of the parent company on the subsidiaries

The existence of the unified economic control is necessary because of financial companies' connection by way of capital shares, intragroup loans and intragroup changes of production. The unified economic control belongs to the tasks of parent company (4). The parent company is in accordance with “a potential conflict of interests” commissioned to the control of financial investments. The financial aim is to control the structure of capital effectively with the goal of increasing the value of the group of entities under the control of a parent as a whole (1). When the parent company is competent enough to perform all the control tasks there is the management type of control- the representative way of the control just for the group orientated to the mechanical engineering field. The parent is responsible not only main decisions, but for the operative decisions too (5). That means there is a very strong influence of the parent on all control areas of the other companies (planning, controlling, etc.) by way of the unified economic control in the mechanical engineering management-holding. The exactingness of the control is in conditions of the holding obvious what is related to the issue of intercultural management. This topic is detailed elaborated by **Cagáňová et al.** (6). Capital equipment of the holding depends heavily on the equity of the parent, because it is the sole or most important provider of capital. The parent company is conformed to the profits and financial strength of individual companies of the holding, to the ratios of the financial markets and in particular to the risk of a financing. These attributes are important factors for the potential investor, which would like to deal with financing of the holding (7). The economic life of the mechanical engineering management-holding is reflected in the



cooperation and dependence of connected companies. The company, which controls other companies through the capital deposits, has to do the financial control. The parent company has to control e.g. if the management of capital structure is really effective. This effect is shown then in the consolidated financial statements, which is created by the parent company. Šnircová (3) says that this information interests shareholders, management of subsidiary companies, and stakeholders which are in contact with at least one of the companies of within the group. The consolidated financial statements are in this case a decisive document for the parent company's management, which is responsible for the fulfillment of the shareholders' aims in the holding.

## Conclusion

Despite the legal autonomy of the individual companies connected to the economic unit called holding, are these companies subordinated to the parent control. The parent company performs the unified economic control which is the main attribute of the holding. One of the most important tasks of the parent company within the unified economic control is to supervise on the financial flows between connected companies. Because of quite intensive dependence and the collaboration between the mechanical engineering management-holding's companies are most of the time used the intragroup flows of business type such as business transactions, mutual collaborations and transfers of investment property. There is obvious the directive influence of the parent company on the financial situation of the holding. The parent company within the mechanical engineering management-holding has a responsibility for all of decisions about the production and activities of subsidiaries. The main aim of the unified economic control performed just by the parent company is to gain a positive financial situation for the whole group. Important is also to reach the economic advantages that follow from the financial situation and to guarantee the ability to pay and profit from subsidiaries. The quality and the completeness of the fulfillment these objectives is reflected in the consolidated financial statements. The consolidated financial statements is represented the mechanical engineering management-holding towards stakeholders.

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## **A NEW CONCEPT OF WORKING ENVIRONMENT IMPROVEMENT WITHIN MULTICULTURAL TEAMS**

Jana MAKRAIOVÁ, Dagmar CAGÁŇOVÁ, Miloš ČAMBÁL<sup>1</sup>

### **Abstract**

*Multicultural team leaders under the conditions of globalisation process must understand that acquiring cultural awareness and diversity management skills is one of the premises for gaining competitive advantage and satisfying the employees' need for social cohesion. The concept presented in this paper goes beyond standard understanding of what cultural diversity management means, as it is not perceived as a set of activities that a business as a whole should be responsible for, but encourage every leader to take responsibility for its own awareness firstly. After understanding that cross-cultural competence is a lifelong learning process it is possible to start recognising one's own cultural mindset before attempting to recognise those of people from other cultures. At this point it is a right time to spread the experience amongst other team members or associates.*

### **Key words**

*culture, diversity, management.*

### **Introduction**

Rapid market and economical changes that took place in the past 20 years have brought a significant effect not only into international trade but have also influenced everyday life, resulting in different cultures interactions and requiring specific managerial competences. These dramatic changes bring both opportunities and difficulties, but all of them are particularly challenges for a companies' management. As workplaces in Slovakia have become more diverse, multicultural management and intercultural management competencies have gained increased prominence. This importance stems from the fact that the world is not a homogenous monoculture and organisations increasingly face two simultaneously evolving issues as the challenges presented when companies move to new, often culturally different locations and increased labour mobility resulting in diverse workplaces where people from different cultural backgrounds share their work experience (1). Multicultural aspects are largely associated with human capital and people at work are the most important asset and

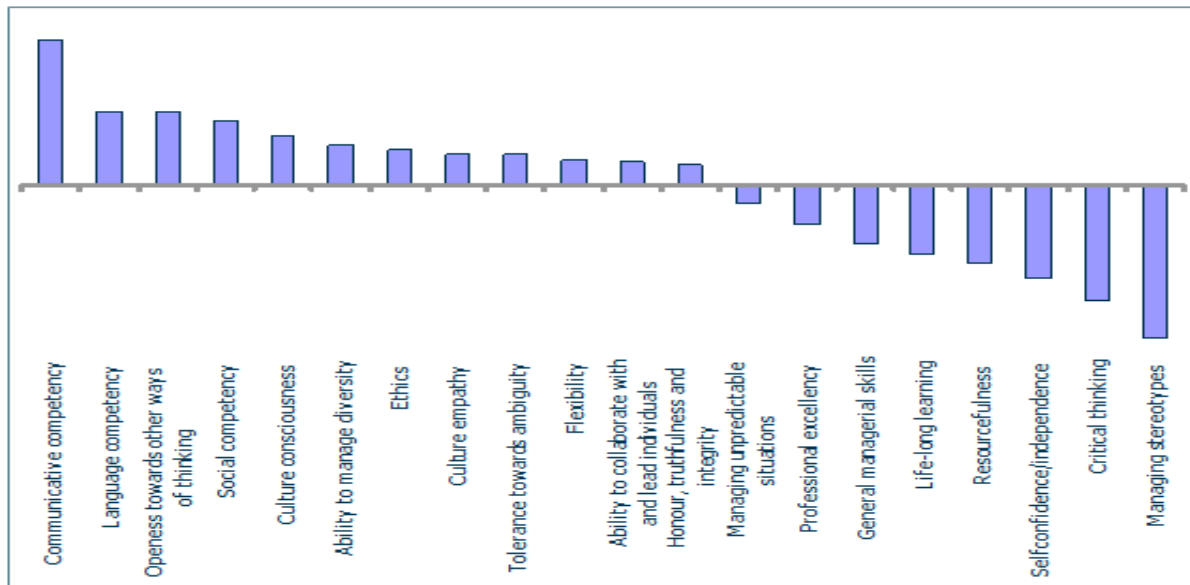
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a bearer of all those important functions and values, therefore it is of great importance to reinforce such managerial competences that will help to develop understanding and tolerance towards cultural diversity and gain another competitive advantage in the form of staff satisfaction and high performance of employees. The aim of this paper is neither to describe all those key multicultural managerial competencies, this has already been done within prior survey and will be referred to later, nor to categorise different cultures by type, but offer a basic instruction how to cope with cultural diversity within business. Cultural encounters can appear within the higher level positions, when for instance a parent company sends its expatriates to another country to help start or run another branches or subsidiaries, but are also represented in recruiting and hiring production workers from other countries. Steps to provide better adaptation management of production workers must be initiated precisely by company management. The staff, which will be in everyday contact with those people coming from other countries, must undergo training in order to manage working with them. They must be available to help the newcomers to adapt to all new aspects of the work positions and new culture, bearing in mind the fact that they might have low or no knowledge of the official language spoken in new country. But the language barrier is only the top of the iceberg, the most visible one, but not the only one. When managing and leading people with diverse cultural stereotypes, supervisors have to meet much higher demands, therefore it is recommended for them to gain knowledge and initiate or take part in training to support the development of multicultural understanding. The sooner they understand and accept cultural diversity in a workplace and see it as an advantage, the sooner they can start to pass the skills and knowledge. Supervisors should place focus on this matter. The aim of every business is nothing more than to keep employees satisfied, regardless of their cultural background. But it is necessary to bear in mind all those specific conditions these people must overcome and handle. And be prepared in advance the variety of possible situations to be encountered.

### **Findings of a previous research study**

A part of a research that was conducted in a year 2010 in Slovakia and involved several enterprises and public institutions with a large sample of participants from lower to top managers as well as common employees became a basement for considering the proper guidance for those who deal with cultural diversity in the workplace, particularly managers. One of the main targets of the research was to identify which managerial competencies are highest rated and at the same time which are considered to be less important for everyday dealing with and managing the international employee base. The research came up with results that are shown in Fig. 1. Following the research it is possible to determine those management competencies which are regarded as most important within Slovak enterprises. It is clear that communication and language are regarded as the most important traits for the effective management (1). On the other side of scale the critical thinking and managing stereotypes can be found. It can be logically concluded that managers in Slovak enterprises would place high importance upon language as many multinational organizations have opened subsidiaries in Slovak during the past decade and there are still only a few multicultural workplaces and therefore day to day language and communication challenges are of greatest importance before developing policies and practices such as diversity awareness (1). Although language and communication skills are very important those competencies focusing on embracing multiculturalism should not be forgotten or underestimated.



**Fig. 1 Overall importance of management competencies (1)**

If a closer look is taken at what makes a good multicultural leader, it is evident that job-related skills, expertise or a well-organised and extensive training, although it is recommended to be an integral part of the whole process, is not enough. It must be some personal preconditions, but definitely it must be a sincere desire for intense preparation and solid personal commitment, which is an on-going, continuous process, consisting of few steps.

### **Development of a new concept of improving working environment**

Prior to introducing this concept, there are several diversity related terms that require explanation or definition firstly, as they all will be recalled later in the text.

#### **Culture**

There are many various definitions of this term, from biological, through sociological, anthropological, up to artistic. One of the most famous multicultural gurus G. Hofstede says that: *“Culture is a collective programming of the mind that distinguishes the members of one human group from another”* (2). Some authors interpret culture in more imaginative way. For instance F. Trompenaars thinks of a culture as layers of onion, the closer to the core of it, the more difficult to identify from outside as well as inside since these unexamined beliefs and assumptions has disappeared from our conscious mind (3).

#### **Diversity management**

*“The ongoing process or incorporating the recognition of workforce differences into all core business management functions, communications, processes and services to create a fair, harmonious, inclusive, creative and effective organisation”*(4).

#### **Corporate culture**

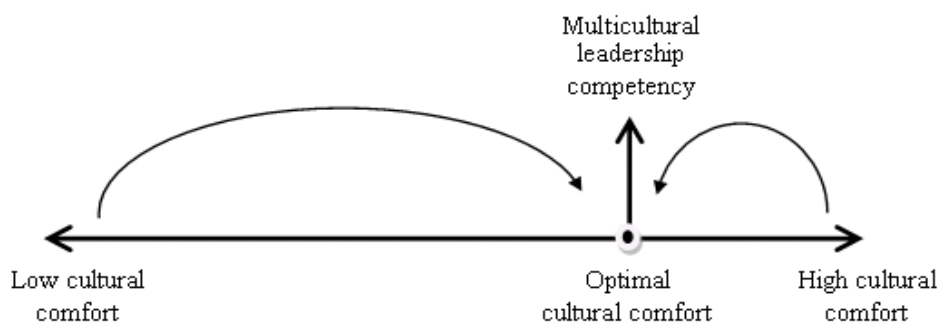
Culture is considered to manifest itself on different levels, with a national culture on the top of it. *“The way in which attitudes are expressed within a specific organisation is described as a corporate or organisation culture”* (3). The basic reason for distinguishing corporate

culture from other levels is that within every business can be found differences in many organisational attributes and no two organisations has the same culture.

The concept specifies few steps to be performed simultaneously and continually that be helpful and useful not only for multicultural managers but also all employees within existing or planned multicultural teams. Possibly all suggested advice and guidance can serve and be applied to both, leaders and subordinates.

### ***Current position on corporate culture scale***

The very first step of the concept is the necessity to find yourself, your starting point on the Organisational Comfort Continuum according to the theory of P. Johnson. She believes that everyone within an organisation can find their self somewhere along the scale, called the CORPORATE CULTURAL CONTINUUM, see Fig. 2.



***Fig. 2 Organisational comfort continuum (Adapted from (5))***

On the extreme left side of the continuum, you will find the individuals who have dominating cultural influences that are extremely different from the mainstream cultural organisation. It is most likely that these individuals come from considerably different cultures and know very little about the corporate culture of a certain company, they work for.

On the extreme right side of the continuum, you will find the individuals who are very comfortable, knowledgeable and skilled within the corporate culture. Although it seems these people might not have any problems with managing cultural diversity, they also need to make some adjustments to become better multicultural leaders, as they might feel so familiar with the present corporate culture, particularly if they are of its own culture, that they become unaware of understanding the needs of diverse workforce.

This model must be applied for every single organisation separately as one individual may experience a different corporate comfort level when comparing more than one business. As seen on the figure, the adjustment level for the individuals at the far right is generally lower than for the ones who find themselves at the far left of the continuum. Usually these people have the most cultural differences from the mainstream leadership or organisational climate. (Based upon (5)).

This point is necessary, as in every situation when steps towards change or improvement are about to take, to help identify where an individual's present position is. However simple this step may look, it is very important and without considering it, it is not possible to continue developing in a right direction.

### ***Multicultural self-awareness***

When the identification of one's present position has been made, this is time to move forward. Building awareness of one's own culture and raising the awareness of other cultures is what must be improved on a personal level. This step on the picture represents the arrows from both sides of continuum pointing to the optimum from which the next steps should proceed.

Awareness of one's own culture means getting to know and being conscious of one's own value, its pros and cons, the contributions to a global effectiveness and well-being. Raising awareness of other cultures means the same, only from the opposite perspective. It is a deliberate and conscious process of learning about other people's cultural background and studying various cultural dimensions.

Moreover one is advised to develop an enthusiastic and positive frame of mind free of any prejudices, stereotyping and discrimination, bearing in mind that putting together an effective diverse team will lead to an appreciable personal enrichment as well as considerable business competitive advantage. This way an individual will start to see own identity in a broader context and after then appreciate the uniqueness of all. The effort of any individual taken towards expanding the horizons of cultural knowledge must be more descriptive than evaluative, free from straightforward comparisons between each other and inappropriate judgements on what is better or worse. The best way how to do this, aside from research, formal study or travelling to other part of the world is simply by get to know the person and ask questions. Genuine and sincere interest with respectful curiosity without prejudgement and criticism is usually understood and appreciated.

### ***Raising others' awareness***

Once the sincere desire in approaching and knowing other cultural influences has started to take place, individuals can pass on this knowledge and share this enthusiasm with others, either subordinates or colleagues, regardless of whether within an existing group or when expanding or building the multicultural team. It is crucial for all to understand that being a part of a truly multicultural team is not only the competitive advantage for a company but also a personal enrichment. People within working teams should be encouraged to talk about diversity, different worldviews, perceptions and other issues regarding cultural differences with those coming from culturally different environment and at the same time be willing to share about themselves in a two-way process of mutual learning. Two-way information sharing, when done appropriately, is the key to becoming culturally sensitive and skilled, as well as building multicultural trust and organisational comfort. This process can be seen on the Fig. 2. as the upward pointing arrow starting from optimal cultural comfort and making it to the top of multicultural leadership.

### **Tips to facilitate raising multicultural awareness**

While getting to know other cultures, several models and concepts can be used as a starting point for learning, e.g. Richard D. Lewis's model, where he categorises all nations into 3 groups (Multi-active, Linear-active and Reactive) with overlapping of some cultural categories and hybrid types (6). Further typology models are Hofstede's multidimensional

cultural model and Trompenaars's 5-dimensions cultural model; however it is not recommended to stick to any of them to a large extent as this generalisation works perfectly with the larger groups of people but might fail when applying to individuals.

Another important consideration when working with and managing cultural diversity is to understand the emotional states that occur when people cross borders (4). The new environment for people coming to other country means an excitement but also some kind of distress or even dread. There is adjustment that needs to take place and most likely they will go through various states of mind before reaching complete comfort. These states are known as the cultural adaptation stages and are described in Table 1.

ADAPTATION PROCESS STAGES (adapted from (7))

Table 1

HONEYMOON	Differences are perceived as fascinating
	Excitement, Discovery, Curiosity, Euphoria
DISINTEGRATION	Differences are impactful and begin to intrude
	Confusion, Isolation, Apathy, Withdrawal
REINTEGRATION	Differences are rejected
	Frustration, Anger, Hostility, Exclusion
ADJUSTMENT	Differences are legitimised
	Self-assurance, Relax, Confidence, Independence
BICULTURALITY	Differences are valued and enjoyed
	Trust, Full acceptance of all aspects of a new culture

Every stage from psychological point of view is represented with specific perceptions, emotions and behaviours. In multicultural workplaces, everyone is either directly experiencing these emotions and displaying the behaviours described in the schema, or is affected to some extent by another team members adapting to a new environment. Understanding the behaviours and feelings can help to understand why people act a certain way in certain situations and therefore being able to recognise that these expressions are just a result of adaptation process is one of the important skills of those who deal with cultural diversity.

All these steps, starting with understanding one's own culture dimensions, continuing with traits and learning about other cultural ending with passing the acquired knowledge further onto team members can be realised with the support of trainings and workshops or with minimum effort searching for basic multicultural guidance or useful self-study materials directly on the internet. Various training programs can help in guiding leaders and diversity involved employees through every step on the road to recognising and exploring multicultural issues. Some authors and researchers believe that completing cross-cultural training should be



mandatory for all diversity involved employees, if not for the whole organisations and therefore they predict an increasing demand for cultural diversity training.

### **Evaluation**

The concept builds upon the belief that every person who wants to succeed within a business environment must take responsibility for their own learning and improving and not only passively wait for actions to be offered from the side of a company. It is about building an individual action plan, which could be helpful particularly for those acting as managers in organisations. They are increasingly responsible for minimising the disadvantages and maximising the advantages of workforce diversity to ensure social cohesion as an essential component of organisational effectiveness. It has been mentioned several times that accomplishing goals for managing diversity brings benefits on both sides, personal and business as well. Successfully managing cultural diversity of the workforce contributes to gaining sustainable competitive advantage, that is to say something that is better than of competitors, valuable to customers and all employees, rare in the industry and finally difficult to acquire or imitate (4). Gaining diversity based competitive advantage reflects itself in many areas, starting in organisational development, continuing in people and knowledge management, ending with customer services. Enterprises using diversity management strategies to address the concerns of specific cultural groups can benefit from:

- **Reducing workforce turnover and absenteeism.**
- **Increasing effectiveness in recruiting and retaining international qualified employees.**
- **Increasing cultural adaptability of expatriates.**
- **Improving team performance, flexibility, cohesion.**
- **Avoiding stressful and unproductive conflicts.**
- **Improving the environment for learning and sharing.**
- **Enhancing competition internationally.**

The competitive advantage lies in a fact that working teams with diverse sets of experiences, mental models, thinking styles and interpretations produce more options and more creative solutions to problems and challenges than homogeneous groups (4).

### **Conclusion**

It is important that industrial businesses acknowledge the economic and social contribution of a culturally diverse workforce and with this regard develop the most possible effort to manage diversity on every level. More importantly, an organisation cannot be a leader in diversity if its employees' minds are not on the same level. Corporations can facilitate the best diversity and inclusion programs, but if the managers and employees do not do their part, disagree with underlying principles, or undermine the program's basic philosophy and goals, the diversity efforts are meaningless. A diversity-driven corporate culture must be inclusive of diversity-driven people (5). The aim of this paper was to enable people, either leaders or individuals who deal with cultural diversity on everyday basis or occasionally, to better understand the importance and value of diverse workforce and learn how to improve workplace performance and environment. It was identified that the paper findings are limited by a lack of a primary research and instead only focus on existing secondary research. The findings will be developed further by conducting a primary research study and the subsequent findings will then

be used as a basis to formulate the research direction of the dissertation thesis. This will focus on establishing the correlation between the performance of working teams and the extent of the multicultural climate.

### **Acknowledgements**

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**THE CURRENT AWARENESS OF RADIO FREQUENCY  
IDENTIFICATION TECHNOLOGY**

Erik JANÁK<sup>1</sup>

**Abstract**

*The article can be divided into two constituent parts. In the first part is introduced the RFID reference model, which categorizes RFID applications into eight groups. In the second part are thereafter presented the results of the survey of the use of information and communication technologies in Slovak enterprises, which was conducted by the Slovak Statistical Office, as well as the results of own questionnaire survey, which was aimed to determine the level of current awareness of RFID use in Slovakia.*

**Key words**

*Radio Frequency Identification Technology, Current State, Awareness*

**Introduction**

Radio frequency identification technology (RFID, for short) is without doubt one of the most discussed topics today. However, RFID is in no way a new technology. Whereas in abroad it is possible to encounter with the most sophisticated RFID applications, RFID in Slovakia is, from this point of view, in its infancy. Accordingly, this article which can be divided into two constituent parts, deals with RFID issues, as well as with the current awareness of RFID. Based on this, it will be possible to conclude that the level of awareness of RFID in Slovakia is really low, as well as that we use only a small amount of RFID benefits.

**RFID in abroad**

The RFID application area is truly vast and very diverse, ranging from various logistics applications through various access cards to the timing of sports events participants. Forasmuch as every application is in a way specific and different from each other not only in standards, objectives as well as expected results, European RFID users and vendors have launched the initiative „Coordinating European efforts for promoting the

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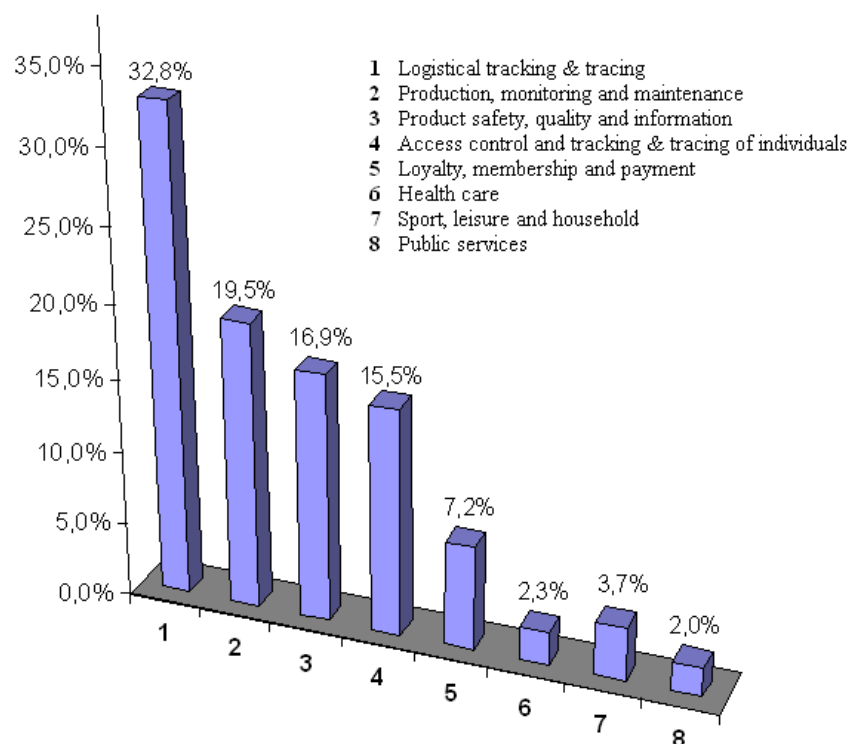
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European RFID value chain“. The main objective of this initiative was to create a reference model for classification of RFID applications.

In order to create a reference model were collected 493 RFID applications that have already been implemented, respectively, their implementation was scheduled until the end of 2009. As can be seen in the figure 1, the reference model categorizes RFID application in eight areas.

The area „Logistical tracking and tracing“ includes all applications related to the identification, localization and tracking of products, packaging, pallets and containers applied in logistics processes. Benefits of RFID logistics applications can be grouped into two areas. The first is a natural process optimization, which is related to saving labour and time. The second area represents the benefits associated with improved quality of information and transparency of business logistics processes.

The second category of the reference model represents the area „Production, monitoring and maintenance.“ This area encompasses a variety of archival and management systems, automation as well as production of automobiles, aircrafts, food and consumer packaging.



**Fig. 1** RFID reference model (Source: own processing by (2))

A third area „Product safety, quality and information“ focuses on RFID applications in the area of consumer packaging, electrical and electronic products, clothing, food or customer information systems.

The fourth area „Access control and tracking and tracing of individuals“ as the first area of the reference model focuses on tracking humans, not objects and describes the possibility of using RFID technology to access control, monitoring and traceability of movements. Perhaps the most important application in this area was the use of RFID transponders in the tickets for the FIFA World Cup, which was in Germany in 2006.

Another category encompasses smart cards (different customer cards, credit cards or membership cards) and RFID-supported payment options that are used in the public transport.

Sixth area "Health care" includes applications designed to help physically disabled persons, and hospital management in the form of RFID implants to monitor health status and physical functions of patients.

In the penultimate category „Sport, leisure and household” are collected RFID applications in the field of leisure and home environment. It can be mentioned the application that allows the timing of sport events participants (e.g. during a marathon), application that supports the arbiter decisions (e.g. whether the ball was behind the goal line), applications used in car rentals and libraries or applications such as smart house or smart fridge.

The last category of the reference model presents RFID applications in the field of services and as the subcategories can be given garbage collection, toll systems, ID cards and passports or electronic health cards.

### **RFID in Slovakia**

In the first part of the analysis of the current awareness of radio frequency identification technology in Slovakia we focused on the survey of the use of information and communication technologies (ICT) that was conducted by the Statistical Office of the Slovak Republic (SOSR, for short).

SOSR conducted the first survey on ICT in 2002, as part of the annual structural survey in enterprises, including the financial sector and a year later the government sector and the health service too. The results of these surveys were presented in their publications on the use of ICT.

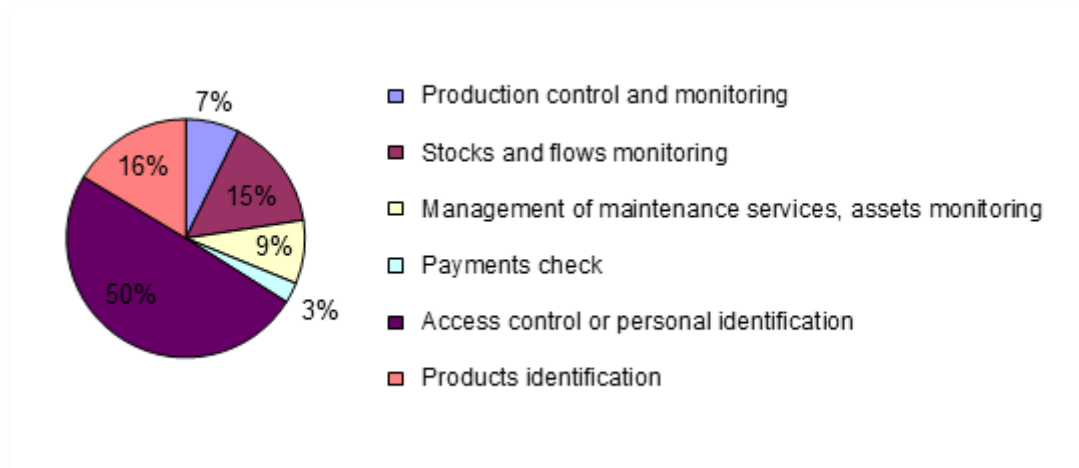
A separate survey focused on information and communication technologies with larger number of indicators was performed for the first time in 2004. This survey was divided into three separate parts, specifically the use of ICT in enterprises, the use of ICT in the financial sector and ultimately the use of ICT in households and by individuals.

A similar survey focused on enterprises and the financial sector was conducted by SOSR in 2009 and in this survey was included a module focused on the use of RFID technology, which is shown in the following figure.

According to this survey, less than 5% of businesses with ten or more employees use RFID technology. As can be seen, the vast majority of these companies use the RFID technology to access control or personal identification, almost 17% of enterprises use this technology to label their products to protect against theft and the same percentage of companies to monitor stocks and flows in their supply chains.

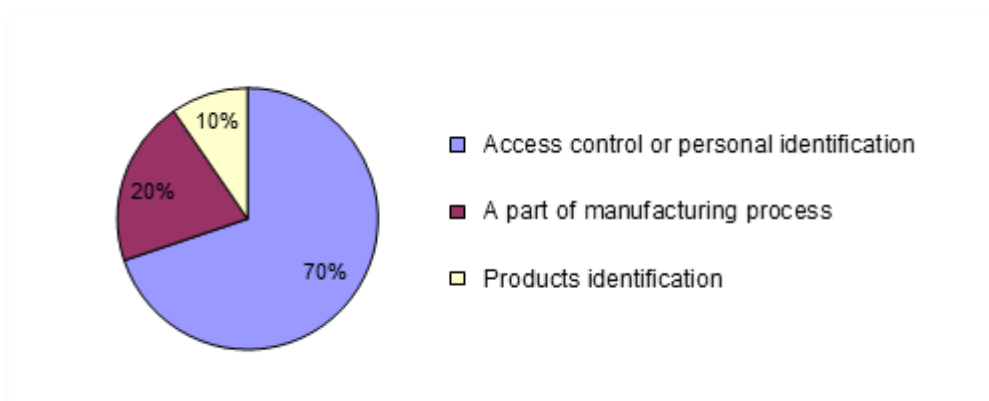
7% of enterprises use the RFID technology to control and monitor industrial production, less than 9% of enterprises to manage maintenance services as well as to monitor the assets and finally, less than 3% of companies use the RFID technology to check the payments, either for highway toll collection as well as in public transport.

A similar survey was conducted by SOSR again in 2011, including a module focused on the use of RFID technology, but reduced to only three different areas. According to this survey, less than 9% of businesses with ten or more employees use the RFID technology, thus the number of companies that use the RFID technology nearly doubled in less than two years.



**Fig. 2** Results of the survey on ICT in enterprises in 2009 (Source: SOSR)

As can be seen in the following figure, less than 70% of enterprises use the RFID technology to access control or personal identification, 10% of enterprises to identify their products and less than 21% use the RFID technology as a part of the manufacturing process.



**Fig. 3** Results of the survey on ICT in enterprises in 2011 (Source: SOSR)

Based on this survey and study it may finally be concluded, that RFID still did not assert itself in Slovakia. Although the number of companies that use RFID technology has been for nearly two years practically doubled, other areas of RFID use in contrast with logistics are still dominant and so is used only a small amount of benefits that this technology offers.

Following the previous research, we conducted a survey that was only aimed at the usage of radio frequency identification technology. In this context, we only focused at industrial enterprises and their level of awareness about RFID as well as their level of knowledge and experience with this technology.

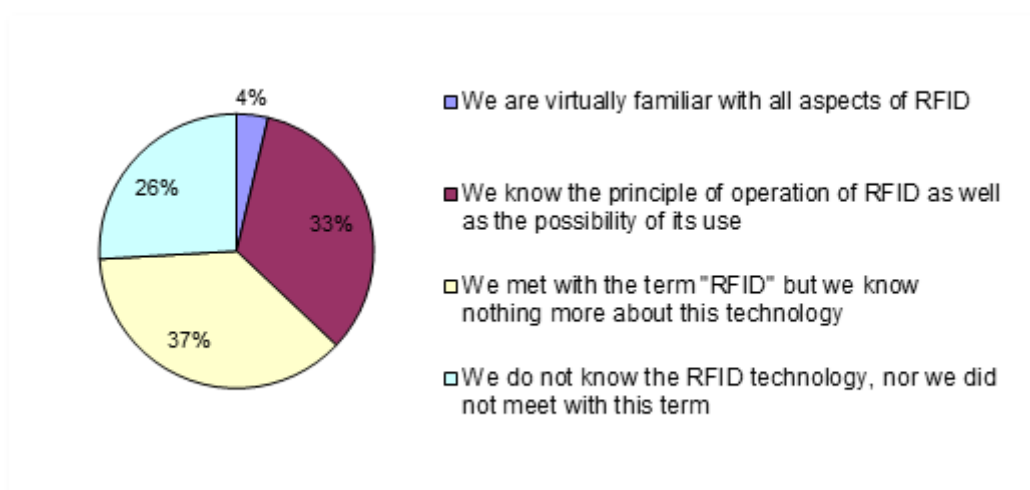
The target group was comprised of industrial enterprises from Slovakia. For this purpose, we developed a questionnaire, whose content was dynamically changeable and adaptable according to the respondent's previous answers. Through this questionnaire it was able to sort out companies that are familiar with RFID technology, have experience with it and their applications of RFID are related to the logistics. For this purpose we addressed 263 industrial

enterprises across different sectors of economic activity of the total amount of industrial enterprises in Slovakia that was last year 2294 and we achieved the return rate of 20.53%.

As can be seen in the following figure, the vast majority of respondents met with the term „RFID“, but they knew nothing more about this technology. 26% of respondents stated that they do not know the RFID technology nor they did not meet with this term, what was the biggest surprise of this survey.

33% of respondents stated that they know the principle of operation of RFID technology as well as the possibility of its use, and only 4% of respondents stated that they are familiar with virtually all aspects of RFID technology.

Greatest interest in the introduction of radio frequency identification is currently registered in the automotive industry and in the warehouse and production management. Currently, from the trio of Slovak automotive plants that does not use RFID technology in the production or storage is Trnava PSA Peugeot Citroën. Volkswagen uses RFID tags to manage autonomous trucks at various production places and RFID plan to introduce in their near future to control the flow of supplies. Kia already has experience with RFID and uses this technology in body shop almost since the start of production (1).



**Fig. 4** Results of own survey on RFID use (Source: own processing)

## Conclusions

As was mentioned above, the RFID technology is in no way a new technology and without a doubt is one of the most discussed topics today. In the literature, but also in a variety of technical articles it is possible to encounter with various examples of RFID use, as well as with the benefits flowing from its use, so it is really interesting that the vast majority of businesses never met with this term in any of these contexts. Based on these results, it can be concluded that the level of awareness about the radio frequency identification technology in Slovakia is very low as well as that we use only a small amount of RFID benefits. The fact is that many successfully implemented projects in abroad clearly testify in its favour and it is really only a matter of time, when this technology finds its application in Slovak industrial enterprises too.

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**THE IMPORTANCE OF HUMAN RESOURCE PLANNING  
IN INDUSTRIAL ENTERPRISES**

Kristína KOLTNEROVÁ, Andrea CHLPEKOVÁ, Jana SAMÁKOVÁ<sup>1</sup>

**Abstract**

*Human resource planning in the business practice should represent generally used and key activity for human resource management because human resource planning helps to make optimum utilisation of the human resources in the enterprise and it helps to avoid wastage of human resources. Human resource planning allows to forecast the future manpower requirements and also to forecast the number and type of employees who will be required by the enterprise in a near future. In the long term period, success of any enterprise depends on whether the right people are in the right places at the right time, which is the nature of human resource planning. The aim of this contribution is to explain the importance of human resource planning and to outline results of questionnaire survey which it was realized in industrial enterprises.*

**Key words**

*human resource management, human resource planning, industrial enterprise*

**Introduction**

Human resource planning must be an integral part of business planning because it is the core of all planning processes of the enterprise. The human being is the most important factor in the operation of the enterprise. A human resource plan must ensure that there is the right number and structure of people in the right jobs at the right time. These people should meet the required company objectives. Based on the mentioned above can be said that the well processed personnel plan is one of the assumptions at increasing sustainable performance and competitiveness of the enterprise.

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## **The nature of human resource planning**

Human resource planning is defined by different authors.

According to Milkovich and Boudreau (1) human resource planning is the process of collecting and using information on the base of which it can be discussed the amount of resources spent on personnel activities.

According to Koubek (2) personnel planning serves to achieve the goals of the organization by development prediction, setting the targets and realizing arrangements leading to current and future ensure of business tasks with adequate manpower.

According to Cascio (3) human resource planning can be defined as effort to anticipate future business and environmental demands on an organization, and to provide the employees to fulfill that business and satisfy those demands.

Based on the definitions from different authors mentioned above, it can be said that each definition is a little different in its nature. Although they have common that the enterprises must have human resources necessary in the future in order to ensure the business objectives and requirements. This leads the enterprise to the competitiveness and prosperity.

Human resource planning can be assessed **in a wider meaning** – it means comprehensive and balanced approach to human resources (plan of the personnel development of employees) and **in the strict meaning** – it means planning the need of employees and planning the coverage of these needs (plan of employees, plan of staffing the jobs) (4).

Human resource planning seeks to ensure that the company has not only in the present but especially in the future the human resources (2):

- in required number,
- with the necessary knowledge, skills and experience,
- with the required personal characteristics,
- optimally motivated and with desired relationship to work,
- flexible and ready for change,
- optimally positioned on jobs and in working group,
- at the right time,
- with the appropriate costs.

The basic aim of human resource planning is to assign the necessary number of employees with required qualification being consistent with the company business plans at the right time and at the right position. It is also necessary to plan a series of steps to eliminate the detected differences between real and desired (required) condition of the employees in enterprise (5).

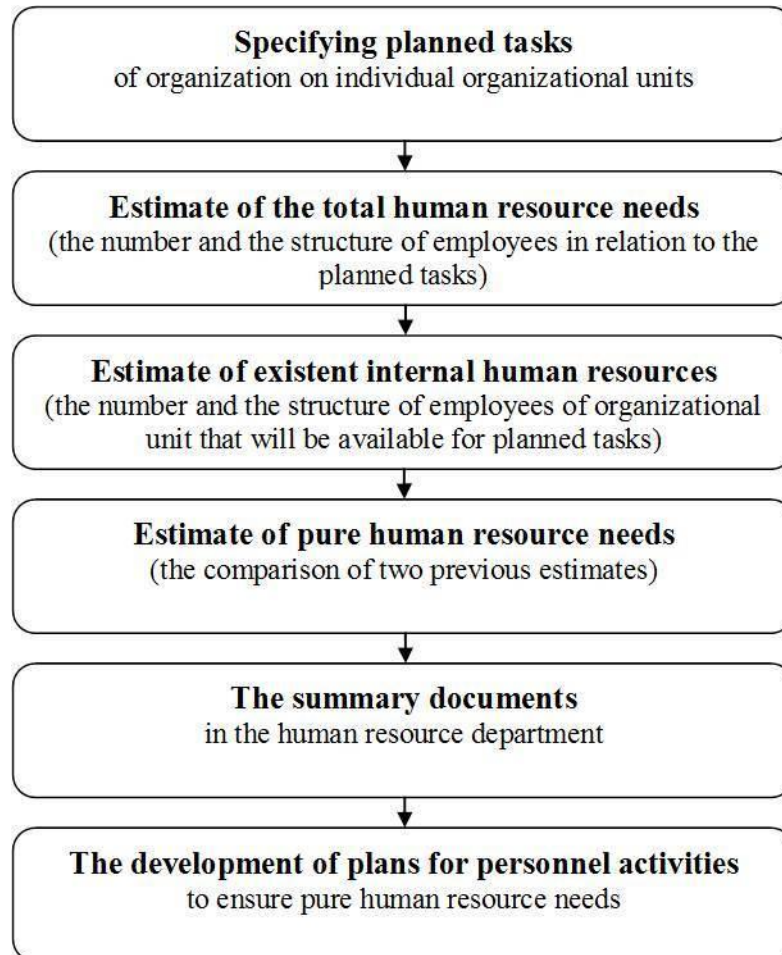
## **The process of human resource planning**

The basis of every planning process is key questions (1, 6):

- 1. Where are we now?** (evaluate the external and internal conditions and conditions for employees)
- 2. Where do we want to be?** - on the basis of strategic forecasting (set the objectives in personnel area which reflect the pursuit of efficiency and maintain a corporate culture)

3. **What should be done to ensure this transition?** - use plans (select appropriate activities and allocate resources)
4. **How did we do it? Where are we now?** (evaluate the results in terms of the original objectives. The whole process begins again)

The process of human resource planning is shown in Figure 1.



*Fig. 1 Steps of process the personnel planning (7)*

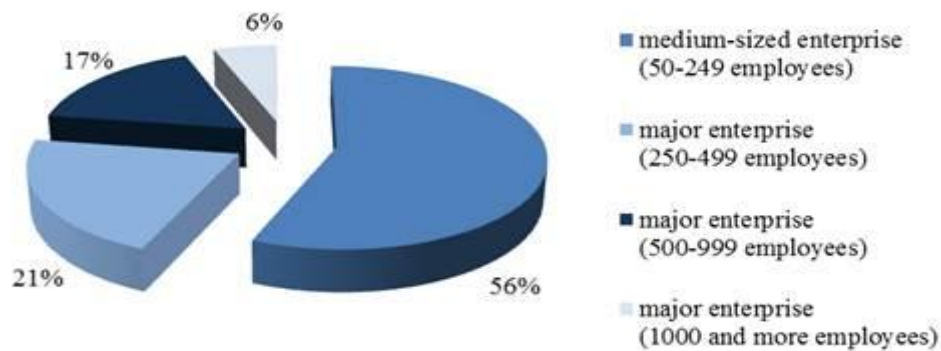
The scheme involves the equation: **total need - internal resources = pure need**. Pure need may be zero but may signal a future shortage or excess of employees. Of course, a part of the personnel planning is periodical monitoring and evaluation of the plans in a light of new knowledge and new tasks that arise (2).

### **Human resource planning in practice**

The information about human resource planning was obtained using the questionnaire survey. When deciding for this method, we took into account factors such as number of respondents, labour utilization, time horizon and financial aspect. A questionnaire survey was implemented in 2012. Questionnaires were sent to medium-sized and major industrial enterprises in Slovakia (by number of employees) and various focus of business activities. On

questionnaire responded 71 medium-sized and major industrial enterprises. Questionnaires were distributed using the online form, electronic form and physically in industrial enterprises. We tried to address the questionnaires directly employees of the personnel department because we assumed that employees these departments provide accurate and relevant information.

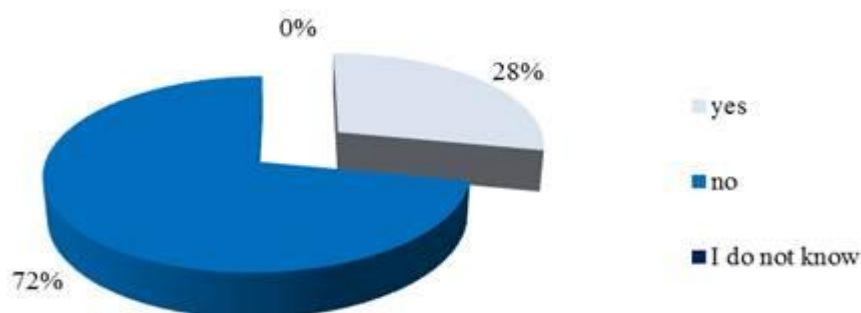
In Figure 2 can see that on the questionnaire responded by 56% medium-sized of enterprises (50-249 employees) and 44% of major enterprises (250 and more employees).



*Fig. 2 Size of the enterprise*

Based on results we gathered from the questionnaire, we can be interpreted these partial outputs:

- Medium-sized and major industrial enterprises elaborate short-term personnel plan mostly in the annual term (54%) and in the quarterly time interval (32%).
- Medium-sized and major industrial enterprises use mostly the combined procedure for human resource planning (51%).
- Medium-sized and major enterprises deal with human resource planning and they consider this planning as integral part of business planning.
- Most medium-sized and major industrial enterprises (72%) have not to prepare a written document (methodology, procedure of steps with using methods and tools) for creation of short-term personnel plan that would ensure that this planning was systematic and controlled (see Figure 3).
- On the other site, most of the enterprises (56%) consider the development of such a document as a one precondition for increasing competitiveness of enterprises.



**Fig. 3** *Elaborated a written document for creation of short-term personnel plan*

If the enterprise is expected to achieve an exceptional performance, it is important that human resources were planned well. Therefore, it should establish a methodology for creating of human resource plan because a well prepared personnel plan saves time, cost and brings efficiency in the using of human resources and also personnel plan represents the first step in creating appropriately large and qualified staff.

### **Conclusion**

Human resource planning is one of the major areas of human resource management. It allows the company to realize its goals, increase the effectiveness and competitiveness of enterprises in the labour market. Human resource planning helps to reduce future uncertainty and to better operate the organisation.

A human resource plan must ensure that there is the right number and structure of people in the right jobs at the right time. These people should meet the required business objectives. Otherwise, it is possible that business goals and plans may not be filled and also the competitors can dislodge the company from achieved market position.

### **Acknowledgements**

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**WEAKNESSES IN APPLYING A PROCESS APPROACH  
IN INDUSTRY ENTERPRISES**

Marta KUČEROVÁ, Miroslava MLKVA, Helena FIDLEROVÁ <sup>1</sup>

**Abstract**

*The paper deals with a process approach as one of the main principles of the quality management. Quality management systems based on process approach currently represents one of a proofed ways how to manage an organization. The volume of sales, costs and profit levels are influenced by quality of processes and efficient process flow. As results of the research project showed, there are some weaknesses in applying of the process approach in the industrial routine and it has been often only a formal change of the functional management to process management in many organizations in Slovakia. For efficient process management it is essential that companies take attention to the way how to organize their processes and seek for their continuous improvement.*

**Key words**

*quality management, process approach, interaction of processes, description of processes, weaknesses*

**Introduction**

Process approach in quality management is based on the principle of the process interaction and management of all processes in enterprise and helps to achieve identified goals of the organization. Efficient processes flow is an important tool for maintaining and strengthening the position of enterprise in a market-oriented environment. We suppose that it is important to take attention to the way how their processes have been organized and seek for their continuous improvement. Process management system is an effective tool for ensuring efficiency and effectiveness, it helps to meet customer's requirements and internal needs of the company.

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## Characteristics of the process approach

Process is a group of value-added activities and activities in process are interrelated in a system, they are not random but interconnected and organized with own competency.

Process management is defined as a systematic identification, visualization, measurement, evaluation and continuous improvement of business processes using methods and principles based on the process approach. Main goal of the process management is to achieve a process efficiency. Process management provides a comprehensive view of all company activities that are integrated in processes. Main principles of the process management are a process orientation and horizontal management. Many organizations were able to reduce their costs, enhance quality and shorten time of product realization and in this way to achieve also inconsequent goals. Change of the functional to the process management means not only change of the organization structure, but also change of people thinking.

There are some recommendations how to apply process management in organization. Every identified/defined process should have its owner, responsibility and competence. There are actually many forms of process documentation and every of them has its pros and cons. Processes might be documented as a process map and a process card, where are defined a process owner, process inputs, outputs, method of measurement, monitoring and indicators.

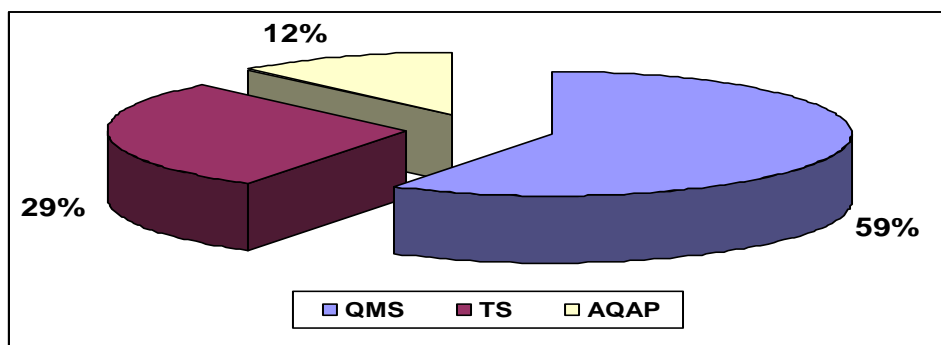
## Materials and methodology of experiment

In the research project dealing with applying of the quality management in industrial enterprises in Slovakia, we asked about the application of the basic principles of quality management system (QMS) in questionnaire completed in 135 organizations.

We found out that 87% of surveyed organizations have implemented QMS and 13% had no at all.

So we have considered only the organizations with implemented QMS and these were divided according to the refereed model in three groups as shown in figure 1:

1. Organizations with a quality system certified according to ISO 9001,
2. Organizations with a quality system certified according to TS 16949,
3. Organizations with a quality system certified according to AQAP.



*Fig. 1 Structure of organizations according QMS certification*

In our research project we asked about level of process management implementation in different types of organizations with established and certified quality management system by means of following questions:



- ⤴ How are identified and described processes in the organization?
- ⤴ Are there defined flows of processes and interaction between them?
- ⤴ Which form of process description has been used in organization?
- ⤴ Do you use in organization a software support in process management?
- ⤴ What kind of the benefits of process management do you see?
- ⤴ Can we say that in your organization is realized a systematic collection of data?
- ⤴ Does management examine the objectivity and reliability of data from individual processes?
- ⤴ How the results of process data analysis are used?

## **Reached results and discussion**

Our research showed that 84% of all organizations with the quality management system identified their processes, 91% organizations of automotive industry and 86% of defense industry organizations.

In question about a definition of flows and processes interaction in organization, almost all organizations responded positively (94%). We expected that organizations with quality management system should identify processes, their sequence and interaction as the subject of quality management system models. We recognized that mostly it's all a formality and often are interrelated and defined only core processes. This approach can reduce the effectiveness of process management.

This was confirmed by the information about the identification of process owners, their responsibilities and competencies. We find out that only 71% of organizations have identified their process owners and defined the responsibilities and competence. In our opinion this is in contradiction with the results, according to which said that 84% of organizations identified processes. One of the process management requirements is that each process owner should be identified providing responsibilities and competencies.

In organizations was realized a identification of processes often as a verbal description (e.g. internal standards, guidelines) or flowcharts, less were used process maps.

We considered process management as a comprehensive area, so it is convenient to use a software support to facilitate and streamline the work. In a questionnaire 46% of the respondents answered that they use some software support in managing processes, 51% of the respondents stated that they doesn't use software support and 3% had no comment to this question. As software support there are used EISOD - Electronic ISO documentation PalstatCAQ, ARIS and some less known software products.

Process approach in organization means a necessary to ensure permanent monitoring, measuring and analyzing of processes, as well as measuring and monitoring the whole performance of the quality management system.

For effective process management it is necessary not only to ensure a systematic data collection, but collected data should be verified for objectivity and reliability. We see some significant opportunities for improvement here, because 42% of organizations with ISO 9001 certificate stated that they were collecting data only from selected processes. Other organizations mainly collect data from all the processes included in the quality management system (see Table 1 and Fig. 2). This we see as a weakness, because to achieve customer satisfaction it is necessary that all of the processes taking place in the organization should clearly and effectively managed. This can only be achieved if all process data will be

objective and reliable. In organizations of automotive industry is a better situation, because systematic data collection from all processes had 80% of them.

IS A SYSTEMATIC DATA COLLECTION IN YOUR ORGANIZATION?

Table 1

Is a systematic data collection in your organization?								
<i>a) from all processes in QMS</i> <i>b) only from realisation processes</i> <i>c) only from some selected processes</i> <i>d) no data collection at all</i> <i>e) didn't answer</i>								
	All enterprises with QMS		Certificate ISO 9001		Certificate TS 16 949		Certificate AQAP	
	Answers		Answers		Answers		Answers	
<i>a)</i>	61	52%	24	35%	27	79%	10	72%
<i>b)</i>	20	17%	15	22%	3	9%	2	14%
<i>c)</i>	34	29%	29	42%	3	9%	2	14%
<i>d)</i>	1	1%	1	1%	0	0%	0	0%
<i>e)</i>	1	1%	0	0%	1	3%	0	0%

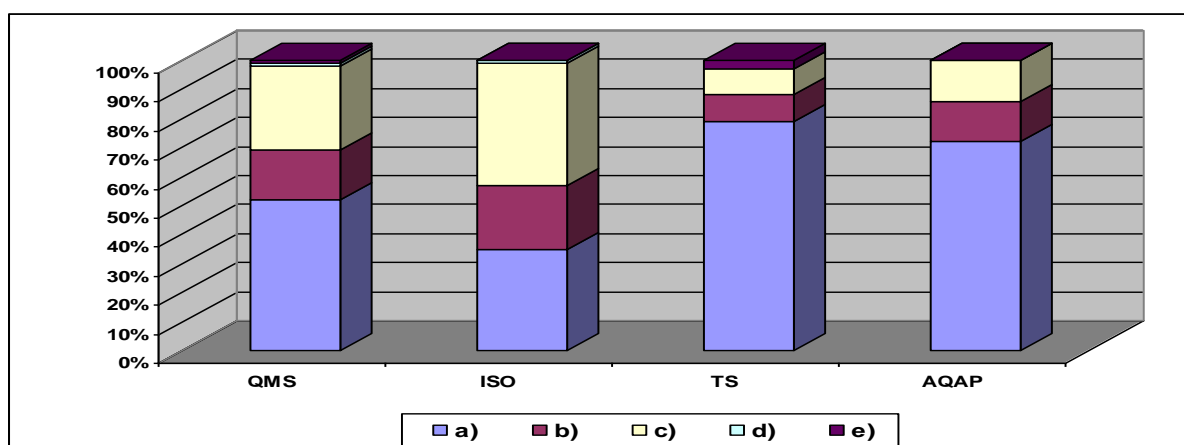


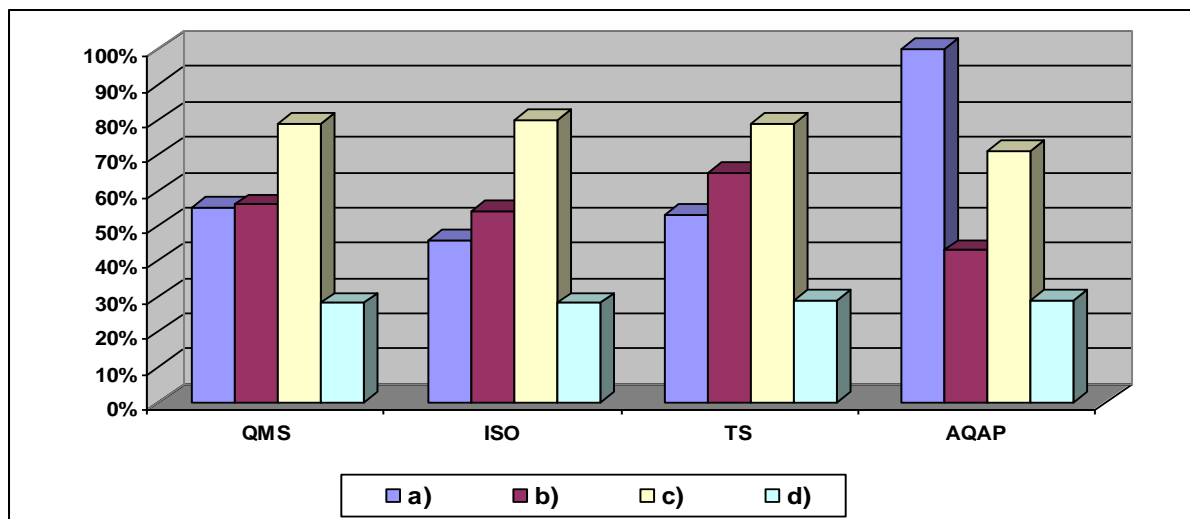
Fig. 2 Is a systematic data collection in your organization?

Our research showed also that about in half of all organizations were verified data from individual processes by the management to ensure their objectivity and reliability. However, cca 30% of organizations reported that management verified the objectivity and reliability of data from selected processes.

We find out that objectivity and reliability verification of process data took place in only about 50% of organizations, including organizations from the automotive industry.

It is important not only to acquire, analyze, store and provide some information obtained from processes, but they should be used, either to improve the process or to improve the growth of the organization. The research project showed that in organizations with ISO 9001 and TS 16949 were used the results of data analysis as a basis for process improvement (see Table 2 and Figure 3).

<b>How the results of process data analysis are used?</b> <i>a) as a reference for management</i> <i>b) for determination of the quality objectives</i> <i>c) for process improvement</i> <i>d) for planning of financial resources within the quality management system</i>								
	<b>Organizations with QMS</b>		<b>ISO 9001 Certificate</b>		<b>TS 16 949 Certificate</b>		<b>AQAP Certificate</b>	
	Answers		Answers		Answers		Answers	
a)	64	55%	32	46%	18	53%	14	100%
b)	65	56%	37	54%	22	65%	6	43%
c)	92	79%	55	80%	27	79%	10	71%
d)	33	28%	19	28%	10	29%	4	29%



**Fig. 3** How the results of process data analysis are used?

#### Summary of questionnaire results:

- Almost all surveyed organizations had a defined process performance/flow and interaction between processes.
- For each process were identified some criteria and methods to ensure the efficient performance of the process.
- Mostly is used for description/defining of the process only a verbal description is used, less a flowchart and process maps.
- Owner of each process was identified in only about 2/3 of organizations, cca 20% of organizations had owners only for some key processes.
- Software support in managing process was used in less than half of the organizations.
- Sufficient monitoring and measurement of the process performance in the quality management system was in only a minority of surveyed organizations.
- The systematic collection of data from all processes was carried out only about half of the organizations. Nearly a fifth of the organizations indicated that they collected some data only from the realization process.
- A systematic approach should be shown in increased efficiency and effectiveness in

the whole organization. However, very few respondents understood that a systematic approach can be also reflected in detecting and defining some relations between processes as well as in identifying some processes barriers in organization.

- Interactions between processes and a relation among process owners is the issue that isn't practiced in business enough and properly, because it isn't fully understood.
- One of the weaknesses in the process approach versus quality management in business practice in Slovakia are a system of measurement and used methods.
- We consider as a failing of management in organizations that a lot of data within the organization are used in non-conforming way.
- Many data were collected from various processes with practical records, but obtained information was not used adequately at all levels of the organization.
- In our opinion measurement and monitoring, which are realized in business practice have only a formal character and the data are not used effectively in the management of quality.
- Many organizations could use in research the information in more effective way, because in any organization there are many information which are not systematically handled and it influences also a quality management system.

### **Conclusion**

Process approach is characterized as a systematic identification and management of processes in the organization and also the processes interactions. Model of a process-oriented quality management system emphasis the importance of understanding and meeting customer requirements, the need to monitor processes according of value, reaching results in terms of performance and efficiency of the process and continuous processes improvement based on results of objective measurement.

Measurement of processes performance is important for every organization, because it provides many objective and exact information about the individual processes and then processes can be controlled by a process owners in order to fulfill all process requirements.

To improve the performance of the organization should be set up a system of indicators, which characterize not only a performance of whole organization but also individual processes. It is necessary to understand the interaction between processes performance indicators and core performance results, or economic indicators.

Enhancement of process performance in organization means a profit for the enterprise, improvement of competitiveness, better market position as well as economic benefits of the enterprise.

We recommend that managers systematically deals with results obtained in the framework of their strategic and operational decisions. The organization should define, plan and implement measurement and monitoring activities to ensure conformity and improvement.

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## **NECESSARY SKILLS FOR WESTERN COMPANIES WHEN EXPANDING TO LOW COST COUNTRIES**

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### **Abstract**

*When planning to expand business to low cost countries Western companies need to pay attention to certain important skills and abilities of their employees as well as management. Consumers and customers in Western societies are vastly different from each other; therefore it needs teamwork between both “worlds” to be successful. Simply setting up a new business unit abroad will not do the trick since it takes a lot of intercultural understanding, using other processes and using a different management approach.*

### **Key words**

*Globalization, Transfer of knowledge, Creating a social network*

**Necessary skills for Western companies when expanding to low cost countries**

***Working in China and India offers ideal conditions to learn interculturally***

For R&D centers in Europe it is often difficult to understand what the market in Asia, Eastern Europe or Latin America really is looking for. First of all the local customer needs to be clearly understood before starting with any product development.

The global vision to develop products in Europe and sell them worldwide is only possible if one modifies and adjusts the products according to the local requirements. In order to be successful selling products globally the following criteria need to be considered:

- Knowledge of country specific as well as regional differences in comparison to Europe
- That the local market always is influenced by the local (business) culture
- Common ground can still be found between Europe and other markets and it is helpful to analyze and use these similarities.

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Growing markets require more attention than the simple set up of distribution and production unit in the respective country. Nowhere else in the world is middle class growing as rapidly as in China and India. The populations of these two countries are enormous as the IMF (International Monetary Fund)<sup>2</sup> shows in their ranking. This on the other hand means that there are two megamarkets with millions of consumers.

Consumers in Western societies have a different buying behavior than people from developing countries. Westerns have a ten times higher buying budgets than the average Chinese or Indian. In 2010 the annual per capita income in the USA was estimated at 47,000 US Dollar whereas India only reached 3,000 US Dollar. Even with ongoing economic growth in India it will take more than two generations to reach the income level of the US.

The income in India as well as China is constantly rising and the need for industrial goods is growing as well. Besides modern machines, household goods or cooling equipment especially the demand for mobility and infrastructure must be met. It is easier for Western companies to export consumer goods to China than to India, since India has not taken the same economic development as other “richer” developing countries.

India offers the chance to solve “old fashioned” problems with new technologies. Indians across the whole country are willing and open minded enough to reach for leadership in new technologies. It is important to point out that the entry to the market does not simply mean to open a distribution office locally. First of all it is best to forget about everything that one has done in order to be successful in the home country. The key to being successful in India means that one has to step away from the logic thinking one is used to and that is generally works in Western societies.

The first approach normally starts with adjusting tried-and-tested products from the European market to the local needs, mostly without success. The new approach now implies to develop completely new products with low performance at low cost.

The target is to create a solution where the product offers 50% of performance at only 15% cost compared to the European counterpart. Trying to reach this relation is impossible if companies use existing products and partly buy its components locally. Vijay Govindarajan and Chris Trimble<sup>3</sup> state in their book that it is necessary to start from the very beginning, to start from scratch.

“Rich” countries such as Europe or the US have an excellent infrastructure at hand, whereas in developing countries things like streets, telecommunication, power plants for power supply, airports, schools, hospitals, banks or raw material storages are still in development.

The introduction of new ideas and products to low cost markets is often critically seen by Western societies where capitalism has been introduced since quite some time. Therefore one finds a stable market with a traditionally grown legal framework, secure working conditions as well as established knowledge about consumers and their needs. But all these features are hindering the implementation of new technologies. And this is the chance for developing countries; they have a higher potential to introduce new processes at lesser resistance. Furthermore developing countries are facing problems that are not yet addressed nor are there any solutions provided by Western countries.

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<sup>2</sup> IMF, 2010

<sup>3</sup> Govindarajan, Trimble, 2012

Therefore developing countries have the option to implement environmentally friendly technologies much faster than “richer” countries which are stuck in their “old” ways and systems. Concluding this means:

- Developing countries offer enormous market chances,
- Developing countries are very different from the Western world,
- Innovation leads to success, simple export will lead to losses.

And all of the above implies that a significant change in the business culture of the mother company needs to take place.

Vijay Govindarajan and Chris Trimble describe 5 levels of thinking regarding a business approach.

On the first level only the markets in rich countries are of interest. Developing countries are not taken into consideration, because the expected profit from exports is seen as too marginal.

On the second level companies can be found that are trying to sell existing products. Their strategy is to start entering the market with a low amount of their product, hoping that after a certain while business will rise based on the assumption that purchasing power also rises in developing countries. Mostly these are goods that only a few rich customers in these countries can afford.

On the third level the so called „customizer“ can be found – they adapt their existing products for certain local requirements. The product basically remains the same; the only difference is that local manufacturer produce a few or even most of the components. This might help to generate a cost advantage due to local purchasing, but on the other hand could lead to lower product quality.

Being on the fourth level means that the product is developed totally from scratch finally the fifth level signifies that all stakeholders are global and not local any more.

The most interesting approach is the new development of products from scratch. That means that developers need to start with the customers’ basic requirements and create a solution that contains only the necessary minimum of features. In order to be successful it is important to keep not only technical solutions in mind but also adjust the business model, introduce new processes or form new cooperation.

Of course an international team is of importance in supporting global strategies. This team needs to generate the right knowledge about not only global markets but also understand local markets, cultures and business models. After a certain period of time it is possible that these teams support the mother company and the overall business if local R&D units in developing countries become global competence centers.

Expansion to new markets not only means transferring existing product portfolios but requires a deep understanding of the customers’ needs and wants in these markets. If new developed products are a success in one country such as India it is even possible to generate more profit when introducing these products to other developing countries or even the home market.



## *Globalization with professional and social competence*

The following points could be seen as a guideline to help local team members in their personal development

- A thorough understanding of customers' needs, wants and expectations in developing countries
- Transfer of knowledge and skills to and from developing countries
- Creating a social network amongst colleagues can help to transfer local inventions and applications from the low cost countries to the mother countries in the West

These (personality) traits are a good basis for young talents who want not only prove their ability for personal development but also show that they possess perseverance, creativity, and flexibility.

The global organization needs to coordinate and adjust their processes when it comes to teamwork, especially regarding the following points:

- Board of management and senior management meetings should be organized in low cost countries
- Development of training for members of middle or higher management in the respective low cost country
- Innovation conferences are held in these countries
- Transfer of employees, money as well as responsibilities to the growing markets
- Creating an overall positive attitude concerning the new markets
- putting focus on the growing markets by sending employees abroad (expatriates)
- Deepening experiences regarding new markets and working internationally
- corporate events should take place in low cost countries
- Creative choices when it comes to looking for new members for the board of management
- Setting up separate business scorecards for growing markets including expectations for outcome as well as focusing on growth indicators and figures

Personal experience in India has shown that strategy that mainly is based on localizing very much hinders new product development. The biggest obstacle to overcome are not technical expertise or budget, but the attitude of the management and the whole business organization.

Not only the new local R&D team but the whole new local company should be founded officially without taking over an existing organization.

Talented team members should come from inside and outside the company. It is important to make sure that the new team not only understands the local market but also has knowledge about Western business culture. Unfortunately not a lot of such "multi-skilled" employees are available on the job market. Therefore special courses and trainings need to be offered to make up for it.

The employees need to learn about the requirements of the new market and they must be able to develop solutions for the market's requirements. The challenge is to create a technical solution while taking the existing local options and supplier market into account. Furthermore the new team needs to have a close collaboration with distribution and marketing as well as

with the R&D units since established processes from the West need to be adjusted and sometimes even defined totally new for the local market.

The local team is strengthened through the option that all resources of the mother company are also available for them, especially in case specific possibilities for development are not in place. The Mother Company or also named “lead factory” has two tasks:

Working on own projects while also supporting the new team in the low cost country. In order to support this double duty, the new company in the developing country makes transfer price payments in order to show that know-how and support are honored. Not only are such payments required concerning taxation but more important employees in the lead factory are rather willing to transfer knowledge when money is paid in exchange.

The senior management of the global organization should receive reports on a regular basis to be able to counteract in case things do not develop as expected. A “customer score-card” which contains the following information would be a good choice.

- Size of the new market
- Which target prices are accepted on the local market
- Is the customer willing to partly carry the risk of buying a new revolutionary product
- Which other competitors are trying to enter the market as well, and at which pace and how aggressive are they
- Is the team able to develop the right product and furthermore can it be produced with the given budget

Plans need to be adjusted in regular intervals. Whereas most companies have one year strategies, this is a term far too long when expanding to low cost markets. In order to have the chance to use experiences more effectively, the management is required to look at the plans and adjust them each month or even at shorter increments. These short term meetings and adjustments help with a quicker teambuilding and in that way also lead to a faster knowledge transfer in both directions.

An optimal process for learning should include the following:

- Quick development of the team if possible at low costs
- Finding solutions based on clearly defined “lesson learned”
- Does the team find creative solutions easily and are they able to put the defined strategy in place

In order to be successful senior managers in charge need to have excellent business knowledge and have to power to get things done fast in the company. Of utmost importance is that management and the relevant employees of the headquarter and all the companies in the organization have a high social competence.

The international network in the organization needs to consist of people that know and challenge each other. Multinational organizations also have to build “bridges” between units in order to secure economic support.

The best ideas often come from outside the headquarter therefore building up networks across borders is so important. Cabrera and Unruh<sup>4</sup> sum up the skills that are necessary for a successful global business.

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<sup>4</sup> Cabrera, Unruh, 2012

Leading a global team is vastly different from leading a local team, for instance in their approach of problems and the whole way of thinking. When building up a network between the mother organization and the business unit in the low cost country it is necessary to have a good relationship amongst team members, if possible getting to know each other personally. Furthermore members of the local team need to have excellent business contacts to potential customers. Moreover the different way of thinking of cultures involved needs to be understood by both sides. So the aim is to integrate the diverse languages, social habits, working hours or even climatic conditions into one effective team.

Looking at product definition it helps to make a comparison between existing solutions and the real requirements from the customer or the market. The lead factory's production processes and choice of material and parts should be subject to constant testing if they are suitable for the market in the developing countries. An analysis of the processes as well as the courage for change are supporting a successful expansion to low cost markets.

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## **THE STATISTICAL REGULATION OF THE TURNING PROCESS**

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### **Abstract**

*This article has been handled of statistics pursuing of capability process of turning by screws production in RIBE Slovakia, k.s. Objective of the statistical assessment process is to determine whether all major manageable causes of instability of the process have been removed. The basis for statistical regulation is management of production processes. If a process operates with large number of random effects, the resulting distribution has the character of a normal distribution. As the result showed on based of quality control charts for average and standard deviation ( $\bar{X}$ ,  $R$ ) we are able to say that the turning process is under the statistics control.*

### **Key words**

*process, stability, regulation, capability, specification limit*

### **Introduction**

In technical practice, an important group of statistic methods are formed by analyze of qualification of measures, production equipment and qualification of process. From statistic methods mentioned above the most used one is examination of process qualification. By the term „process qualification“ we mean ability of the process to observe technical parameters required by value and tolerance limits.

Objective of the statistical assessment process is to determine whether all major manageable causes of instability of the process have been removed. It is necessary, that average value of observed reference of quality and its variability have been constant over time. It can be managed through control charts and forms the preparatory stage of statistical control.

The basis for statistical regulation is management of production processes. Production process is consider to be managed when there are active only accidental impacts. If a process operates with large number of random effects, the resulting distribution has the character of a normal distribution (3).

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Currently, the process capability assessed by indicators process capability  $C_p$  (characterizes the scattering process) and  $C_{pk}$  (characterizing the position of the tolerance field process). Processes are considered as eligible if the index  $C_p$  and  $C_{pk}$  greater than 1.33.

***Input data which is necessary to know prior to the survey process capability are:***

- manufacturing conditions of mass production,
- capable measuring equipment,
- capable manufacturing facility
- statistically managed process,
- assess normality,
- technical and other specifications accurately reflecting the requirements of the customer,
- nominal value of the proposal is in the middle of the tolerance field.

By using this method is necessary that information and knowledge from previous observations of the process are considered and applied.

## **Materials and methods**

***Description of the turning process***

Operating step: turning by production order WZ 12 860 B RIBE ISR – axial screw

Mark: slot width

Rating value:  $1,62^{+0,08}$  mm

Lower Specification limit (LSL):  $1,62$  mm

Upper Specification limit (USL):  $1,70$  mm

Check centre: *profiloprojector Mitutoyo with precision 0,001 mm*

Production device: *turning machine TRAUB TB 30*

Volume of subgroup:  $N = 250$  screws

Measure of subgroup:  $n = 5$  screws

Interval of taking: *every 30 minutes*

Number of subgroups:  $k = 50$

***Calculation of specification limits***

Regulation charts are working with data from the manufacturing processes at approximately regular intervals (in hours or quantities). Each subgroup consists of the same product or service. Each subgroup to obtains one or more characteristics of the subgroup. The Shewhart control chart is a graph of values of the characteristics of the subgroups compared to subgroup number. It consists of a central line (CL) located in the reference value of visualization features. In evaluating whether the manufacturing processes are or are not in statistically managed state, the reference value is usually considered the average value of data is usually considered the average value of data. Control chart has two statistically established regulation limits, one on each side of the central line, called the upper regulation limit (UCL) and lower regulation limit (LCL). They are at a distance of  $3\sigma$  on each side of the central line, where  $\sigma$  is standard deviation of the monitored statistics for the file [1].

*Average range in subgroups*

$$\overline{X}_i = \frac{1}{n} \sum_{j=1}^n X_{ij} \quad [1]$$

$i = 1, 2 \dots k$  and  $j = 1, 2 \dots n$ ,

$X_{ij}$  – measured value in  $i$ - subgroups

$J$  – serial number of measured value in  $i$ - subgroups

$K$  – number of subgroups

$N$  – file size

*Span in subgroups*

$$R_i = \text{MAX}(X_{ij}) - \text{MIN}(X_{ij}) \quad [2]$$

$i = 1, 2 \dots k$  and  $j = 1, 2 \dots n$

$\text{MAX}(X_{ij})$  and  $\text{MIN}(X_{ij})$  is maximum and minimum value in  $i$ -th subgroup.

*Average of process*

$$\overline{\overline{X}} = \frac{1}{k} \sum_{i=1}^k \overline{X}_i \quad [3]$$

$\overline{X}_i$  - average of  $j$  – th subgroup

*Average of span*

$$\overline{R} = \frac{1}{k} \sum_{i=1}^k R_i \quad [4]$$

$R_i$  are spans and averages in  $i$ -th subgroups ( $i=1, 2, \dots k$ ).  $\overline{R}$  and  $\overline{\overline{X}}$  in quality control charts are central lines (CL).

*Calculation of specification limits*

$$UCL_R = D_4 \cdot \overline{R} \quad [5]$$

$$LCL_R = D_3 \cdot \overline{R} \quad [6]$$

$$UCL_{\overline{X}} = \overline{\overline{X}} + A_2 \cdot \overline{R} \quad [7]$$

$$LCL_{\overline{X}} = \overline{\overline{X}} - A_2 \cdot \overline{R} \quad [8]$$

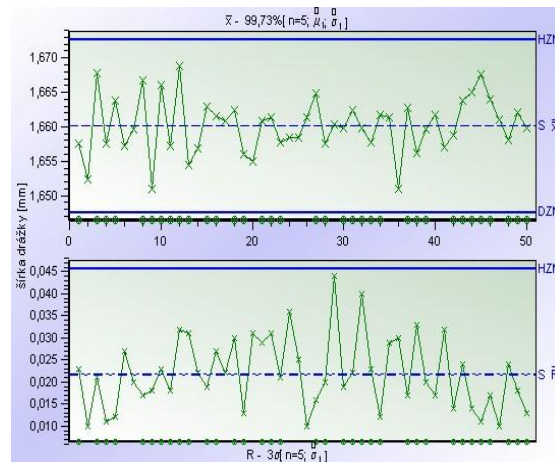
where  $D_4, D_3$  and  $A_2$  are constants moving in dependence on volume of subgroups  $n$ , in our case  $n = 5$ :  $D_3 = 0,000$ ,  $D_4 = 2,114$ ,  $A_2 = 0,577$ .

## Results

In turning process we obtained values for 50 subgroups. Characteristics  $\bar{X}$  and  $R$  are applied in quality control charts. For quality control charts  $(\bar{X}, R)$  (Fig. 1) are valid these regulation limits:

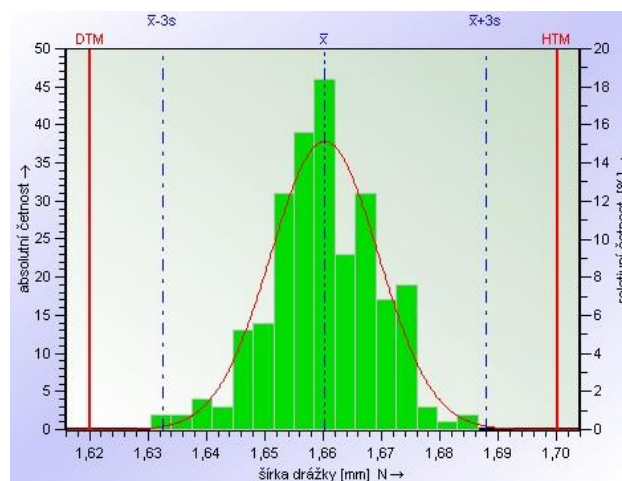
$$\begin{aligned} \text{UCL}_X &= 1,6758 \text{ mm} & \text{UCL}_R &= 0,04525 \text{ mm} \\ \text{LCL}_X &= 1,6448 \text{ mm} \end{aligned}$$

General average  $\bar{\bar{X}} = 1,66016 \text{ mm}$ , average span  $\bar{R} = 0,054 \text{ mm}$ . The process is considered as eligible, all measured values are inside the regulation zone.



**Fig. 1** Quality control chart ( $X, R$ )

We can see the process variance in histogram (Fig. 2), where the position of the process was appreciated, variability and figure compared to tolerance zone. Based on the bell-shaped histogram, we note the confirmation of normality; the process runs at constant conditions. All measured values are inside the tolerance zone.



**Fig. 2** Histogram

## Summary

The capability of turning process in RIBE Slovakia, k.s. showed that the process provides the products that meet the claimed quality criteria. The process is considered as eligible, all measured values are inside the regulation zone. The process is able to provide the products in compliance with the tolerance zones.

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## **INFORMATION QUALITY, ITS DIMENSION AND THE BASIC CRITERIA FOR ASSESSING INFORMATION QUALITY**

Jana MALÁ, Ľubica ČERNÁ<sup>1</sup>

### **Abstract**

*Poor quality of information in modern organizations depends on many aspects. As such the size and nature of the information, human factors, organizational culture, experience and skills as a manager and other team members, technology, but also the quality of inputs including, but not least, include data quality. Applying methodology of quality control help organizations create effective management of its information. The method of quality information control depends on all those aspects. The importance of the organization should be given to dispose of an optimum amount of information in the required quality and especially to share this information. Quality information is the key to the success of the project management, but also in many other areas. Understanding the mechanics of control information management and class is essential, but it is experience that distinguishes successful information quality managers.*

### **Key words**

*information, information quality, dimensions of information quality, criteria for assessing information quality*

### **Introduction**

Information and information quality is an important part of the maturity of management information systems. The motivation for the organization should be given the information and quality of information. This work is full of challenges as an organization should detect impending problems using a variety of measurement, analysis and improvement of data quality and information quality.

### **Information quality**

Meade and Sarkis point out that in the real environment is no longer sufficient experience, skills, knowledge and information to achieve and increase competitiveness. It is essential to be able to transform the knowledge, skills and information into products (1).

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The ability to "adapt" this is what organizations rely on to achieve customer satisfaction. The ability to 'adapt' is the result of two assumptions, the information process:

- experience and
- technologies.

The ability to "adapt/convert" should be maintained through continuous process of improvement and learning (2).

Prof. Wang made a step forward beyond the work of professors Meade and Sarkis and found an analogy between the issues of the quality of industrial products and quality issues of information processing and further stated that information processing can be working on sensitive data to produce information products. Prof. Wang points out the organization to handle information such as managing your products, if you want to increase productivity (3).

Turban defined information as "data that are managed in a way that gives meaning to the recipient" (4).

Definition Turban Copeland and Simpson extended to include "all communication or representation of knowledge such as facts or data in any environment and form" (5).

### ***Differences between manufacturing and information products***

There are differences between industrial products and information processing. These differences can be classified into five groups:

- **intangibility** - Product manufacturing system produces visible and tangible products, not whether the information is immaterial nature. Product quality can be measured with physical measuring instruments according to design specifications. Measuring information quality is subjective and based primarily on opinion and user expectations.
- **inputs** - Making process requires raw experience/knowledge and technology, while the information process requires data, expertise, technology and time.
- **end user** - "End-user of the product is not defined in advance, but it is clearly defined later" (6). The user of the information system is part of an information system, while the products are far from the user.
- **consumption** - The raw materials used in the information system is data that can be used for more than one consumer without their exhaustion. Materials used for the production of product can be used only to individual natural products. Information may be provided and consumed at the same time, while the products must be made prior to consumption.
- **handling** - Unlike product data can be transformed to information and undefined number of customers simultaneously via physical media (e.g., disk) or intangible ways (e.g., via e-mail). Both the information and the products can be stored before delivery to the customer, making the quality of information similar to the quality of products but different from the quality of service, because service quality can not be stored and checked before sending (7).

In terms of the quality of these differences do not affect the analogy proposed by prof. Wang between products and information (8).

### ***Dimensions of information quality***

As well as managing the quality of products as well as for quality control of information has more dimensions. Dimensions of quality information on issues those are important for

consumer information. Prof. Strong quality dimensions of information divided into 4 categories:

- intrinsic,
- contextual,
- accessibility,
- representation.

The selection of these dimensions is based primarily on an intuitive understanding, experience from industry and depend on the actual use of information (9).

The table 1 shows how the various dimensions of quality information understood the experts dealing with this issue (10).

**DIMENSIONS OF INFORMATION QUALITY AND THEIR MEASURES (10) Table 1**

Dimension	Implication /Definition	Dimension 's Measures from Selected Literature				
		Delone & McLean (1992)	Goodhue (1995)	Wang & Strong (1996)	Strong et al. (1997)	Jarke & Vassiliou (1997)
<i>intrinsic</i>	Information has quality in its own right.	Accuracy, precision, reliability, freedom, form bias.	Accuracy, reliability	Accuracy, believability, reputation, objectivity.	Accuracy, objectivity, believability, reputation.	Believability, accuracy, credibility, consistency, completeness.
<i>contextual</i>	Data quality must be considered within the context of the task.	Importance, relevance, usefulness, content, completeness, currency, sufficiency.	Currency, level of detail.	Value-added, relevance, completeness, timeliness, appropriate, amount.	Relevancy, value added, timeliness, completeness and amount of data.	Relevance, usage, timeliness, source, currency, data warehouse currency, non-volatility.
<i>accessibility</i>	Information is interpretable, easy to understand and manipulate.	Useability, quantitiveness, convenience of access.	Accessibility, assistance, ease of use, location.	Accessibility, ease of operations, security.	Accuracy and access security.	Accessibility, system availability, transaction availability, privileges.
<i>representation</i>	Information is represented concisely and consistently.	Understandability, readability, clarity, format, appearance, conciseness, uniqueness, comparability.	Compatibility, meaning, presentation, lack of confusion.	Understandability, interpretability, concise representation, consistent representation, arrangement, readable, reasonable.	Interpretability, easy of understanding, concise representation, consistent representation.	Interpretability, syntax, version control, semantics, aliases, origin.

### ***The basic criteria for evaluating the information quality***

The basic criteria for evaluating the quality of information Have key information is certainly important, but the distribution of this information is largely influenced by their use and processing. Significant differences could consist of how effective is this information presented. Seemingly more information can act as a fair, but find their origin is not always easy. It is therefore necessary to be able to identify their level of trust and confidence and know:

- author of the information (without the author's knowledge, it is impossible to determine qualifications for writing this information, or author possessed the necessary knowledge, experience and tools to be able to adequately determine if the submitted material has been evaluated in an objective manner),
- date information (to assess the timeliness of the information horizon),

- a source of information (for assessment information is also important to know from what source data based author, to some at first glance the same information can be elaborated on several types of data, but given the purpose for which the information given below is used, it is necessary know the sample on which it is based).

Verification of the quality of information is a complex process. Five basic criteria that need to be addressed in order to present information that can be identified as reliable include:

- authority,
- accuracy,
- currency,
- coverage,
- objectivity.

These criteria have their origin in the world of print media and are considered to be universal criteria that need to be addressed regardless of the media evaluated; each criterion must be addressed individually. Often, however, there is overlap between the various criteria, leading to discussions, such as "authorship" and "accuracy" - is thus for a more complete picture considered together (11).

### *Authority*

Authority - criterion present a clearly "known" author, respectively the organization or group of authors, who are the owner of that data and information created based on good knowledge of the field. There are several methods for assessing the authorship of traditional sources of information.

- One possibility is to determine the qualifications of the author, which will be investigated his previous training, experience, reliability and credibility regarding issues in the field.
- Another method might be to address the investigation and organization of work with information, so we can see the quality of output information based on several factors, such as:
  - accuracy of the content of the information,
  - types of users who make use of this information in the organization,
  - writing on the use and sharing of information,
  - determine responsibilities,
  - experience authors resulting information to the organization.

Author - an employee who wants to produce quality information must abide by the standards organization for the development of new information that place emphasis on quality. Of course, these standards must support new trends, creative thinking and at the same time must be in accordance with ethical standards. Adherence to these standards and efficient use of the organization will improve the quality of information used, which ultimately will help reduce costs, time and improve the quality of project management, respectively. Compliance with the scheduled dates and costs (11).

### *Accuracy*

Accuracy - the criterion is the extent to which the information is reliable and error-free. It is used a series of checks and balances, so that it can ensure the accuracy of information such as:

- use controls to monitor the accuracy of the facts,
- the use of the peer review process and comparing information on tracking accuracy using scientific assumptions and facts,

- the use of established standards and procedures to maintain consistency in the creation of new structures of information,
- listing sources of factual information, where appropriate / necessary.

Ratings information includes a large part of daily life, although often times do not realize it (e.g. for normal purchase, also consider many factors, subjective and objective, that affect our decision/price, brand, color, size, packaging, recommending friends, look, knowledge, .../, where the product meets our expectation is the assumption that in the future, the next purchase will look exactly the particular product with which we have had positive experiences). Even when you watch televisions evaluate information. It is true that accuracy plays an important role in the assessment, but the assessment information to focus on the author of that information, organization, accuracy, objectivity, currency, speed, etc. As I mentioned authorship and accuracy are often interrelated factors that affect us in evaluating the quality of information. It is necessary to admit that there is a presumption that a smart worker with good reputation of reliability will produce quality, accurate information, although the opposite may be true.

The advantage of information and communication technologies used in organizations to easily share information, know-how of employees in specific policy issues as well as the entire organization. To increase the effectiveness of work organizations should sort of shared information and the desired update intervals based on the needs of employees / users defined for a particular job. The objective of achieving the required accuracy of the information necessary to control and coordinate database of information within the organization (11).

### *Objectivity*

Objectivity - a criterion which reflects the fact the extent to which information without distortion by personal feelings, prejudices, or other information the author.

Neither the information presented cannot be considered completely unbiased, because everyone has a reason to "colorable" information. Therefore it is very important to try to assess the objectivity of the information provider. Knowing intention organization or individual may be visible in advance assessor bias, which could be the basis of information occur (for example in the field of health - simply would be able to evaluate the objectivity of the information specialist as a tobacco company). However, there are areas where it is very difficult to detect bias sources of information with which we are familiar. Objectivity is another important factor that purposely or unintentionally influences the quality of information, and thus the entire information content (11).

### *Currency*

Currency - a criterion which expresses to-date information.

To evaluate the validity/life information is important to know the time of information, but also the purpose of its further use, given that the input data can be used for further processing from the same source, but for different purposes, a different and timeliness of data (hourly, daily, weekly, ..., comprehensive database content shuffle x-th number of records, just the first and last records x y records, ...). I have noted that it is necessary to record and review information and course dates and revisions. To clarify and streamline information sharing is necessary to use uniform formats / templates for various kinds of information and sharing of information for easier handling and updating (11).

### *Coverage*

Currency – criterion that includes the breadth and depth of processing certain types of information, which depends both on the input and the expected output for the desired final result respectively. Further use. The scope of information determines the person responsible for the above. Depth respectively. The level of information processing also depends on who will be determined.

Mentioned five key evaluation criteria for assessing the quality of information will provide a starting point for assessment of the problems related to these features characteristic of all information (11).

### ***The question for verification of the evaluating information quality***

Mentioned five key evaluation criteria for assessing the quality of information will provide a starting point for assessment of the problems related to these features characteristic of all information (11).

In analyzing and evaluating the quality of information according to individual criteria can help us questions specific to each type of evaluation criteria.

### *Authority*

One of the key aspects of how to evaluate the information as a whole is finding the author. If we find authorship information, first it is necessary to comprehensively assess the authorship of (or information belongs to the organization of time ...) and then identify specific author (department, group of people, individuals). To analyze the quality of information we can to help following questions:

- Is it clear who (which organization, department, group of people or an individual) is responsible for the information? – without an answer to this question, it is not possible to verify the authorship,
- Is the information clearly indicated the name of the author and qualification information, which has ultimate responsibility for the content of the information?
- Is there a way that you can contact the author of the information?
- Is it clearly stated in the information, which from the organization/company/department/individual is responsible for the contents of the information?
- Is it possible to check the author's qualifications? (Professional experience in this field, education, membership in other organizations, ...)
- Are there the internal regulations of the organization's rules for determining authorship in the new "important" information/ideas/rationalization design/...? (11)?

### *Accuracy*

Accuracy of information is the degree to which the information is reliable and error-free. Answers to these questions should be taken into account in determining the accuracy of the information:

- Is the information provided without grammar, spelling, and typographical errors? - Information not yet mentioned errors do not guarantee their accuracy, but errors of this nature shows the lack of quality control, but mainly the fact that such errors may produce inaccuracies in the information.

- If there are graphic representations, pictures and tables, are they sufficient legible and clearly marked (11)?

### *Currency*

Currency stamp information is how long and how much information can be considered current. Questions:

- Is there by the information the date of first publishing the information?
- Are there clearly shown the dates of updates, information and also their date of expiry?
- Is each update/revision information stored? Is it possible to see them back?
- To avoid the confusion, has the organization a standardized format for the creation and revision of the information?
- Does the organization use standardized international date format (11)?

### *Coverage*

The following issues should be taken into account when considering for whom the resulting information is intended.

- Is it clear what evidence was taken into account in the processing of that information?
- If the information is being developed, the date of completion of processing information?
- If the information combines more types of elements are clearly distinguished these elements?
- Is it clearly defined target group for whom the information is intended?
- Is the information given to the user in such a way as to be easily and quickly processed known (11)?

### *Objectivity*

Objectivity reflects the extent to which data represent reality without distortion by personal feelings and prejudices. Questions:

- Is it possible the sources of information to verify in the original source, this source of information given in?
- If the author of information is individual, is it evident that the information provides an overview of the author?
- Is it clear that the information could be affected due to the organization sponsors or policy?
- Is it clearly defined who is responsible for the actions/responsibility of the information (11)?

## **Conclusion**

The area of information quality in project management is not specified exactly and it is clearly associated with the project quality. For organizations, it is important to possess optimum amount of information in the required quality and especially to share this information. In this article, I introduced the dimensions of quality of information and basic evaluation criteria for assessing the quality of information. Database management can help organizations prevent an error condition to deal with the present situation, respectively. If such a situation occurs it can facilitate its solution based on the previous experience of other projects that are recorded, not only in terms of time as well as cost and quality.

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## **SUSTAINABLE ERGONOMIC PROGRAM – BASIC CONDITION FOR IMPLEMENTATION OF CORPORATE SOCIAL RESPONSIBILITY**

Petra MARKOVÁ, Rastislav BEŇO, Karol HATJAR<sup>1</sup>

### **Abstract**

*Gradually increasing pressure on companies to start to behave socially responsible is a response to social, environmental and economic requirements. The society faces a period of changes that have occurred since the beginning of the crisis and revealing weaknesses in the economy. We become witnesses of rapid changes and challenges posed by globalization, lack of resources, demographic structure and innovation. Objective necessity becomes a corporate social responsibility (CSR) already at the companies' level, which is supported by the approach of the EU institutions and the Slovak Republic. One of the possible appliance through which we can contribute to the sustainability of CSR are sustainable ergonomic programs. When we want to talk about sustainable ergonomic program is important to focus on three key areas. The first area is the Impact of technic and technology to employees at work, the second area is the Importance and impact of socially responsible HR in ergonomics and last area is the Creation of the work environment in relation to environmental sustainability. Ergonomic programs sustainability requires to apply appropriate methods for evaluation of their cost benefit and health effect.*

### **Key words**

*sustainable ergonomic program, corporate social responsibility, sustainable development, health effect evaluation*

### **Introduction**

The theme of corporate social responsibility becomes one of the key apparatus of company policy in EU countries, including the Slovakia in recent years. From companies that want develop their activities long in term and sustainable at European level are expected to be increasingly engaging in corporate social responsibility in whole the supply chain. Talking about the involvement of the supply chain, then is need to take all of its constituents, i.e. suppliers, all the segments of the manufacturing process, providing the high quality products,

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care for employees (ergonomics), ethical approach to customers, and ultimately managing the company with regard to the environment in cooperation with local communities. To achieve these objectives, it is important to have loyal employees. One of the apparatus to get the loyalty of employees is making appropriate ergonomic acceptable working conditions, with using of participatory ergonomics principles in ergonomics program. Very important is evaluation of health effect and cost benefit. In this article we will describe our proposal of modification method for health effect evaluation.

### **Sustainable ergonomic program**

If we want to define the sustainable ergonomic program, it is appropriate to introduce the fundamental concepts that form the collocation, i.e. ergonomics, corporate social responsibility and sustainable development.

#### **Ergonomics**

The IEA defines ergonomics like [2, 4]:

*„Ergonomics (or human factors) is the scientific discipline concerned with the understanding of the interactions among humans and other elements of a system, and the profession that applies theoretical principles, data and methods to design in order to optimize human well being and overall system. Practitioners of ergonomics, ergonomists, contribute to the planning, design and evaluation of tasks, jobs, products, organizations, environments and systems in order to make them compatible with the needs, abilities and limitations of people.“*

*Ergonomic program focuses in applying of ergonomics principles in the practice. The result depends on conditions created for ergonomics solution in specific enterprise.*

#### **Corporate Social Responsibility**

Corporate social responsibility is defined by the XY institution like [1]:

*“Integration of companies’ practices and values in such a way that they are in the inclusion the interests of all stakeholders, including consumers, employees, investors and the environment.”*

#### **Sustainable development**

Sustainable development has been defined in many ways, but the most frequently quoted definition is from *Our Common Future*, also known as the Brundtland Report [3, 5]:

*"Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains within it two key concepts:*

- *the concept of **needs**, in particular the essential needs of the world's poor, to which overriding priority should be given; and*
- *the idea of **limitations** imposed by the state of technology and social organization on the environment's ability to meet present and future needs."*

#### **Sustainable ergonomic program**

*Sustainable ergonomic program can be understood as a comprehensive approach contributing to the development and optimization of organizational, work and technical systems that considering and integrating business practices and values in such a way that they are included the interests of all relevant subjects in their current and future changes and interactions.*

### ***Scope of Sustainable Ergonomic Program Interest***

According to the above definition, the sustainable ergonomic program should focus on the study and improvement of the following areas:

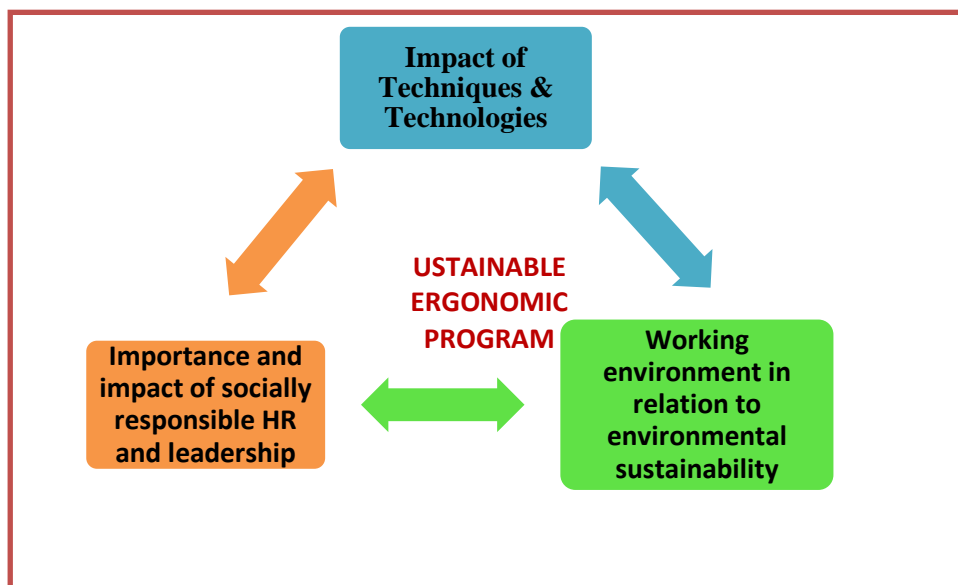
- impact of techniques and technologies to the employees at work,
- importance and impact of socially responsible HR and leadership in ergonomics,
- creating the working environment in relation to environmental sustainability.

Particular areas, i.e., impact of techniques and technologies to the employees at work, the importance and impact of socially responsible HR and leadership in ergonomics, creating the working environment in relation to environmental sustainability cannot be perceived separately. Their mutual effect and interaction are essential to employees at work process, as schematically shown in Fig. no.1.

#### ***Impact of techniques and technologies to the employees at work***

The impact of techniques and technologies to the employees at work in current development and progress can project especially in followed areas:

- ***Ergonomics aspects of relation human – machine*** – in this area should be explore the parameters for securing ergonomics sustainability of human – machine system, clarify the factors influence which the limiting ergonomic sustainability of human – machine system,
- ***Ergonomic principles of rationalization techniques and technology to ensure sustainable production*** - in this case should ergonomic principles serve to express the importance and benefits of rationalization techniques and technologies to ensure sustainable production and to clarify the interaction and adaptation of sustainable techniques and technologies for the man at work process,
- ***Ergonomic principles of selection and use of tools and machinery*** – should clarify the importance of using ergonomic instruments and tools for people in the work process in terms of sustainable work performance, and also to express the benefits of using ergonomically acceptable instruments and tools for corporate social responsibility.



***Fig. 1 Interaction of sustainable ergonomic program areas***

### ***The importance and impact of socially responsible HR and leadership in ergonomics***

Human Resources Management is an essential part of the modern understanding of the ergonomics. In terms of the sustainable ergonomic program is needed to pay attention to the following areas:

- ***Ensuring and maintaining employees in terms of the ergonomics*** - in this area should be described in various managerial HR activities in accordance with ergonomic requirements (*planning, acquisition, selection, deployment, training, adaptation, evaluation, motivation, retraining*)
- ***Achieving sustainable work and productivity*** - with defining of the basic parameters for evaluating sustainable productivity of the employee with respect to its physical and psychological realities would lead to the efficient functioning of the system: man - work organisation.

### ***Creation of the working environment in relation to environmental sustainability***

The working environment is an important subsystem of the environment, because the human work influences the environment in a positive as well as in negative term. Therefore, it is necessary to give this issue proper attention.

- ***Ergonomic principles creation of the optimum working environment*** - describing their using in rationalisation the working environment in the context of corporate social responsibility and to clarify the impact of their using on job performance of the employee,
- ***Criteria for rationalisation the working environment*** - to express meaning, benefits and to explain the interaction and adaptation of sustainable working environment to the man,
- ***Methods and methodology of the review and evaluation of the work environment*** - should be used for defining the basic parameters needed for the evaluation and exploration of sustainable working environment,
- ***Ergonomic aspects of the system "man - working environment"*** - should serve to define the parameters to ensure the ergonomic sustainability of the system "man - working environment" and to clarify the effect of limiting factors of sustainability of the system,
- ***Factors of the working environment*** - defining the factors applicable to the field of sustainable working environment in terms of laws, regulations, standards and other recommendations that go beyond the legal requirements.

### **Methods for evaluation of impact work and working conditions on employees health**

Modified epidemiological methods are used in assessing impact of work and working conditions on employee, and also in assessing the impact of ergonomic solution implemented to rationalize employee health.

Epidemiology through its methods focuses on evaluation causes of diseases and belongs to medical sciences. Occupational medicine focuses on occurrence syndromes of cumulative trauma disorders (CTDs) associated with long-term, unilateral overload at work.

Ergonomic solution in framework of ergonomics program, in difference from epidemiology, focuses on prevention of symptoms related to work related diseases in employees affecting quality of their work and quality of their life as well. Location and intensity of painful symptoms localized in musculoskeletal system (MSS), represents in framework of ergonomic programs indicator of work and working environment shortcomings.

In initiation of ergonomic program is applied retrospective cohort study design.

Data for this study conducted within ergonomic programs are obtained by a "Nordic Questionnaire" [6] which is specially treated for this purpose. Additional data are obtained by analyzing the video records of work and workplaces and by interviews with employees from the company's top management to employees on analyzed workplaces.

### ***Methods Applied for Ergonomic Analyzes in Framework of Initiation Ergonomic Program***

In an ergonomic analysis of the initiation of the program apply ergonomic study of the "Case-Control" and retrospective cohort studies design (Table 1), which allow to assess the expected impact of risk factors on the incidence of musculoskeletal system (MSS) disorders and diseases [7, 8 and 9].

These include factors that denote according to how we can influence them as un-modifiable and modifiable factors.

Un-modifiable factors we cannot influence. These include factors such as e.g.: age of employees, their occupational exposure, body height, weight, sex and weight - height indices.

Modifiable factors are such a factors of work and working environment that can be influenced. As the base is used by 15 general operating modifiable factors of the "Nordic Questionnaire", which may be complemented by other factors that are identified in the ergonomic analysis of the company.

ARRANGEMENT OF FREQUENCIES OBSERVED CHARACTERS IN THE STUDY OF THE "CASE CONTROL" AND RETROSPECTIVE COHORT STUDIES DESIGN FOR ERGONOMIC ANALYSIS

Table 1

Arrangement of frequencies evaluated characteristics		Occurrence of diseases (in epidemiological study) (in ergonomics - <i>occurrence of MSS problems</i> )	
		Ill (Cases); <i>in ergonomics:</i> <i>persons with MSS problems</i>	Healthy (Controls); <i>in ergonomics:</i> <i>persons without MSS problems</i>
Exposed	YES	A	B
	NO	C	D

We calculate "Odds ratio" – what means the relative chance or relative likelihood (abbreviation OR) as follows:

$$OR = \frac{A/B}{C/D} = \frac{AD}{BC} \quad (1)$$

$$\text{Odds Ratio} = \frac{\text{Ill exposed} \times (\text{Healthy unexposed})}{\text{Ill unexposed} \times (\text{Healthy exposed})} \quad (2)$$

Odds ratio is interpreted as follows:

- If the result is equal to one, the risk is the same for exposed and unexposed workers.
- If the result is less than one, then the observed factor is protective and not a risk factor for the observed disease.

- How many times the result is greater than one, so many times are employees exposed to a greater risk of developing health problems compared to non-exposed employees.

The occurrence of MSS problems in the enterprise and certain period of time is expressed by **prevalence** (abbreviation - PR), which is defined as the proportion of individuals in the population, respectively e.g. working group affected by certain symptoms, respectively health damage in a certain time period. In terms of the reporting period are identified point (instantaneous - a cross-sectional) and interval prevalence – as the prevalence for a specific time period. The ergonomic studies for a better understanding expresses it in percentages in the year of data collection.

$$PR = \frac{\text{Number of employees with MSS problems in examined group/last year}}{\text{Number of all employees in examined group/last year}} \times 100 \quad (3)$$

### Methods Used in Evaluating Effectiveness of Measures Implemented

For the purpose of evaluating the effectiveness of applied ergonomic solutions by cohort study is necessary to establish a set of employees who were examined in the ergonomics program initiation and remained even after the implementation of solutions which did not report in the earlier study any MSS problems.

For these employees, are then calculated a basic indicator of the effectiveness of applied solutions ergonomic rationalization - **incidence** (abbreviation: I), which in medical field indicates disease dynamics and in ergonomics dynamics of appearing of MSS problems which indicate the persistence of deficiencies of studied system from point of view ergonomics.

It expresses the proportion of individuals in the population, respectively. e.g. working group who initially did not feel any MSS problems and diseases that they showed up only in the period following the implementation of solved preventive measures.

Incidence in framework of ergonomic programs studies is similarly as prevalence expressed as the proportion per 100 employees in e.g. one year time period (4).

$$I = \frac{\text{Number of new cases with MSS problems/ year}}{\text{Number of all employees examined in the last study without MSS problems/years}} \times 100 \quad (4)$$

Cohort study belong to long-term studies involves healthy person without any MSS problems. In this type of study are selected two groups. The first group exposed to a particular factor and the second group, which is not exposed to this factor.

This type of study is in the field of ergonomics applied to evaluate impact of the adopted measures on health in the form of multiple ergonomic impact studies. At scheduled intervals (usually annually), is then calculated relative risk (RR), which is the proportion of the occurrence diseases or MSS problems in exposed and unexposed employees. This risk is interpreted as an Odds Ratio (OR).

In the original ergonomics cohort, however, we in difference from medical cohort include also employees for whom there were indicated MSS problems.

We are convinced that in further continuation of ergonomics program efficiency evaluation is necessary calculate, as it is done in the case of incidence, at what percentage of

employees status after the implementation of ergonomic rationalization of work measures did not improved occurrence of MSS problems ( $I_0$ ) and also at what percentage of employees MSS problems improved or disappeared due to applied measures ( $I_+$ ).

$$I_0 = \frac{\text{Number of employees where MSS problems did not change/year}}{\text{Number of all employees examined in the last study with MSS problems}} \times 100 \quad (5)$$

$$I_+ = \frac{\text{Number of employees where MSS problems disappeared/year}}{\text{Number of all employees examined in the last study with MSS problems}} \times 100 \quad (6)$$

Occurrence of employees in or which health status or MSS problems were improved ( $I_+$ ) it means that the implemented solution was successful.

Persons in which nothing has changed ( $I_0$ ) is then (based on our experience) necessary to focus further analysis and especially for them to look for other measures for to improve their working conditions in continuation of ergonomics program [10].

## Conclusion

Sustainable ergonomic program, from our perspective, is seen as an extension of ergonomics which it enriches about the philosophy of corporate social responsibility. The expected benefit of the application of sustainable ergonomic program in company practice is creating such working conditions, where employees will be able to submit the required work performance in a long term sustainable standard. Taking into account the requirements and needs of employees, company contributes to the corporate social responsibility. At the same time, company, employees as well as society with application of the sustainable ergonomic program can get benefits, which although cannot see immediately, but rather in the long run.

We consider that successful sustainable ergonomic program based on the participating principle can on the one hand improve efficiency of human work, and on the other hand it can reduce occurrence of health problems and diseases associated with cumulative trauma disorders (CTDs). This can also contribute to savings of funds in the health sector and thus contribute to solving the problems of financing health care

Based on our research experience we believe that, it would contribute to further increase of human work effectiveness, if commonly used evaluation of incidence could take in to account especially a group of employees where applied ergonomic solution of rationalization work did not bring any improvement in their MSS problems.

We are convinced that in solution recent social problems would help more intensive focus on a group of employees whose primary job rationalization ergonomic solution did not produce a decrease of difficulties of MSS problems.

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**USING OF CBA METHOD FOR EVALUATION  
OF THE INVESTMENTS IN THE LINK  
WITH SOCIAL RESPONSIBLE BUSINESS**

Ľubica MRVOVÁ<sup>1</sup>, Jaromíra VAŇOVÁ<sup>1</sup>

**Abstract**

*The paper presents knowledge from the area of economic efficiency assessment of the environmental investments, in the link with environmental management with context of social responsible business and their mutual connection, on the base of CBA method. CBA method creates basis for the software CBA1.1, which was created for the needs of business practise for the small and medium enterprises in the Slovak Republic.*

**Key words**

*Economic efficiency, environmental management system, the method of CBA environmental investment, Corporate Social Responsibility, CBA 1.1 software program*

**Introduction**

Managers have to solve not only the operative tasks, they also have to solve tasks join with future of the company. This area contains mainly the questions of long-lasting investments, which can significantly influence the future of the company. These decisions are connected with sustain development of a company and its existence in the market. Reactions of a company on the market needs and the flexibility of a company can influence long-term perspective of the company.

Role of the companies in the society was rapidly changed during the last years. People consider the companies not only as a product and services providers, which only target is maximization of the profit. In the present days one of the conditions for the successful company in the long term period is responsible behavior against the society in which the company acts.

However CSR is mainly focused on the satisfaction of needs of all involved sides, we do not forget to focus on the internal environment of a company, on employees, on suppliers and on customers.

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## Corporate Social Responsibility (CSR) and Environmental Management

CSR we can consider as a way to the profit growth and as a path to moral and economic development of a company, production enlargement, improvement of production technologies, equipment modernization and growing the satisfaction of all stake holders through qualified, motivated and loyal employees.

Corporate Social Responsibility is the concept of business behavior. According the CSR, companies incorporated social questions and questions joined with environment in to the business activities and also in the relations towards the stakeholders. The implementation of the CSR in the company practice is based on the willingness of the company. Area of the environment offers the space for industrial companies for the penetration of the methods as a CBA and corporate social responsibility. CBA method helps the companies make decision for the investments to the environment and further for they successful realization.

*We knows two regulations (3):*

1. **EMS according to international standards of ISO 14001** represented by the certification standards **STN EN ISO 14 001 „Environmental Management System”**. „Specification with guidance for use“.

Model EMS is based on performance individual components of the process:

- Environmental Policy.
- Planning.
- Implementation and operation.
- Controlling.
- Management review.

2. **EMAS, rule number. 1836/93 EEC**, Scheme of systems of environmental management and audits used in the countries of EU (or regulation EÚ č. 761/2001 about the optional attendance of organization in the scheme of environmental management and audit).

The mutual comparison of EMS (ISO 14001) and EMAS (table 1. below)

DIFFERENCES AND COMMONALITIES ISO 14001 A EMAS (7)

Table 1

Scope	STN ISO 14001	EMAS
<b>Management system</b>	contained	Contained
<b>Validity of the types of activities</b>	all types	particularly manufacturing activities
<b>Introduction of system</b>	possibility in some parts or across the enterprises	just across the enterprise
<b>Admission assessment</b>	recommended	mandatory
<b>Register of impact</b>	required	required
<b>Declaration of state of the environment</b>	not required	mandatory
<b>Finishing of process</b>	<b>certification</b>	<b>verified statement of the status of the environment</b>
<b>The cycle of audit</b>	undetermined	more than three

### ***Method Cost - Benefit Analysis (CBA)***

Cost - Benefit Analysis (CBA) is methodical procedure, which gives answer for the basic question: "What the realization of project gives and what the realization of the project takes? " It is the direct comparison of costs and benefits. In the process of CBA should be compare disproportional of costs and benefits.

### ***The sequence of steps in the processing method of CBA***

According the Sakál [5] is necessary during the CBA processing, use these four steps:

1. First defining the nature of the project.
2. Second definition of the structure of beneficiaries.
3. Describe the differences between investment and zero alternatives.
4. Identification and quantification of all relevant *Costs & Benefits (C&B)* for all phases of the project.
5. The allocation of additional „of invaluable” *C&B* and their verbal description.
6. Design "-value" F & B cash flows.
7. Setting the discount rate.
8. Calculate the criteria variables.
9. Performing sensitivity analysis.
10. The project the assessed calculated based on the criteria indicators, of invaluable effects and sensitivity analysis.
11. The decision on admissibility and financing investment.

According Siebert during the CBA analysis focused on forecasting inputs for calculating of criteria indicators [7]:

- a) the present value
- b) the net present value
- c) Internal rate of return (IRR)
- d) The payback period
- e) Index return.

### **Methodology for assessment of efficiency of the social focused projects “CBA”**

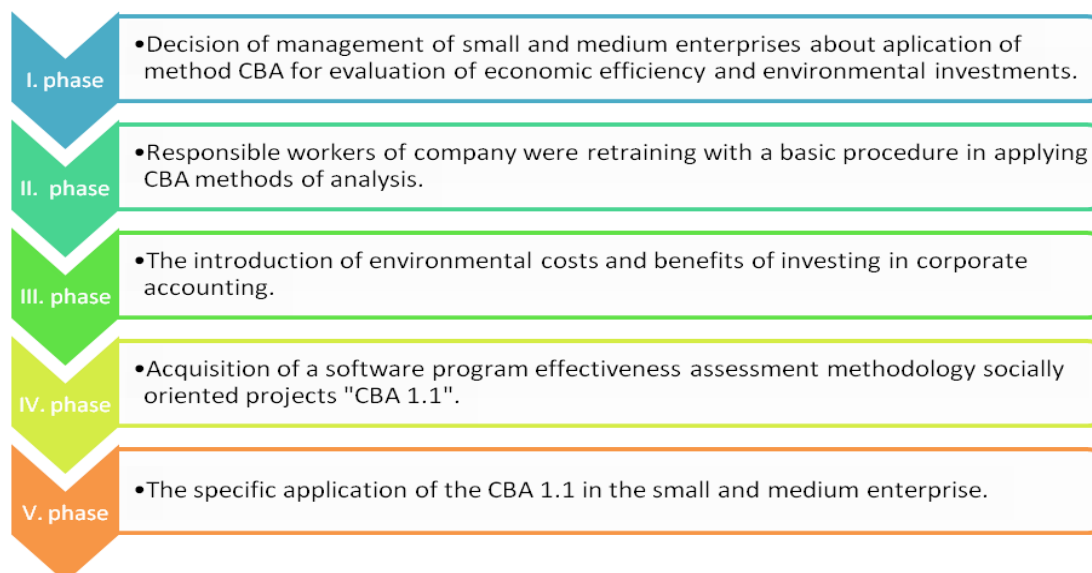
The specification of the CBA method is on its focused on small and medium companies in the market Slovak Republic. Research made during the solving of dissertation project was focused on wide range of small and medium companies with implemented MES system. In a one hand analytic and synthetic method used during the research brought us the overall view on the current problem of economic efficiency assessment of environmental investment in the Slovak Republic but in the other hand we can also influence it through this method. On the base of the reached results from the dissertation project we are proposed the methodic which is described on the figure below.

Proposal of methodology for assessment of the economic efficiency of environmental investment consists of 5- phases Figure 1.

This program was created for the needs of MSP for elimination of the manual work with the complicate calculations of criteria indicators during the method „CBA”. The program is able to eliminate of complicated work with calculations, mistakes during the complicated

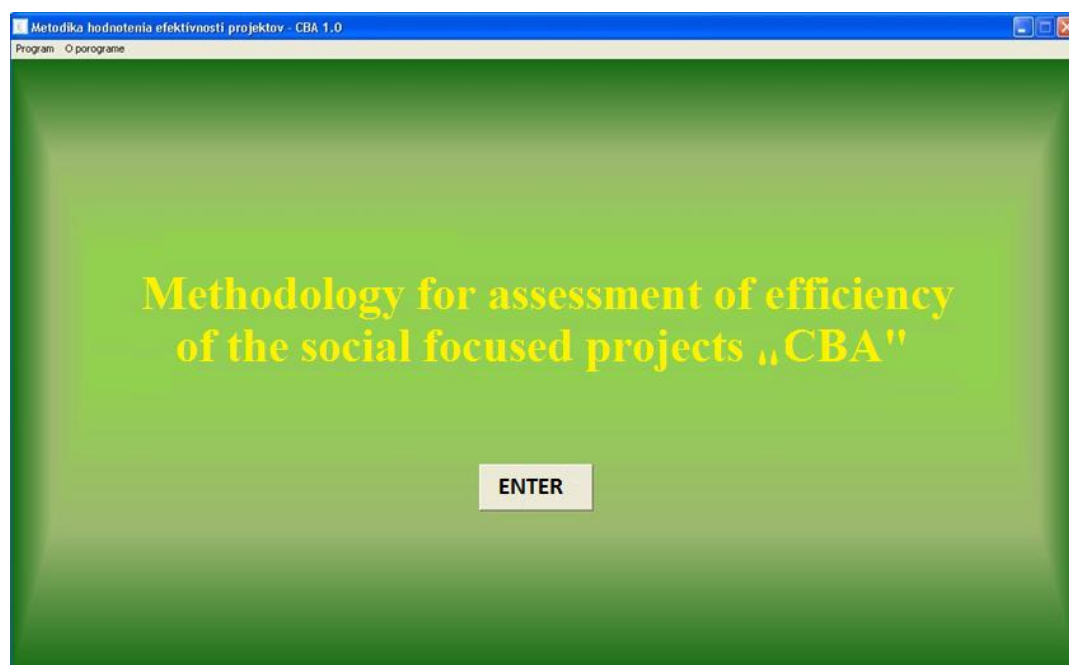
calculations and give a possibility for comparison of project variants on the base of various inputs:

- *Cash flow*
- *Profits and lost*
- *Ratio*



**Fig. 1** *Proposal of methodology for assessment of the economic efficiency of environmental investment*

At the figure 2 is the first page of the program CBA1.1., which is entrance to CBA program.



**Fig. 2** *The first page of the program CBA 1.1*

## Discussion

**Advance of the CBA** is its systematic process, which we are able to use successfully during the each project and also we can utilize CBA with full range of its theoretical and methodical potential for scanning of company finance system, on the base of definition of all effects of the company cash flow.

For the calculation and evaluation of criteria indicators during the investment project is necessary to enter the relevant data in to the dialog windows.

Advantages of program CBA 1.1:

- Speed and exact calculation of the criteria indicators
- Eliminate the manual calculations
- Further benefit is possibility to calculate the project on the base of three ways of data input (*cash flow, profit and lost, ratio*)
- **Complex summary of alternatives**, assessment of the project on the base of the opportunity of the three ways of data inputs allows the user compare the calculation through the criteria figures.
- Comparison give us the feedback and information about the input data.

## Conclusion

The main principle of the CBA 1.1 program is its speed and exact calculation for the calculating of the criteria indicators. The program eliminates the manual calculation of assessment of economical efficiency of environmental investments. The second benefit of CBA program 1.1 is possibility of project calculation of the three bases data input. (Cash flow, profit and lost, ratio). The CBA program usage can significantly influence the speed of managerial decision making. The program can provide relevant and clear information.

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**CODE OF ETHICS IN A MULTICULTURAL COMPANY  
AND ITS LEGAL CONTEXT**

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**Abstract**

*The entry of foreign investors and simultaneous expansion of different national cultures, religions, rules, moral and ethical standards is bringing up problems of cooperation and coexistence of different nationalities, ethnicities and cultures. Working in an international environment therefore requires adaptation to a variety of economic, political, legal, technical, social, cultural and historical conditions. One possible solution is to define a code of ethics, guidelines which find enough common moral principles, which can become the basis for the adoption of general ethical standards, while respecting national, cultural differences and practices. In this article, the authors pay attention not only to the analysis of the common ethical rules in a multicultural company, but also to the legal aspects of codes of ethics. Each code of ethics is a set of standards, which, like the legal norms, regulate the behaviour of individuals. These standards, however, must simultaneously meet certain statutory criteria that define the boundaries of regulation of employee's behaviour.*

**Key words**

*multicultural company, code of ethics, legal regulation, cultural differences*

**The fundamental issues of codes of ethics in a multicultural company**

Entrance of foreign investors, but also the changes in the business environment that significantly interfere with the human resources and its needs, make the issue of cooperation and coexistence of different nationalities, ethnicities and cultures more topical. This problem can now be considered as very timely, because it strengthens the connection between members of different national cultures, religions, laws, moral and ethical standards.

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Working in an international environment means for employees of companies the adaptation to the various economic, political, legal, technical, but also social, cultural and historical conditions. With the increasing internationalization of business, the growing attention is paid to the ability to work effectively in a different cultural environment, to adapt the company employees to new cultural and social conditions, and even to recognize, accept and appreciate the differences between people, that were created in a different cultural context and to take advantage of management approaches that were created in this environment. In this case we are talking about the so called international management, which also includes the management of cultural diversity in business. The practical cultural diversity of a company should also include an active help to integrate employees coming from another culture into the working environment formed mainly by the dominant culture. Companies are increasingly coming into contact with members of various national cultures, religions and laws. One of the main tasks of management is to create the conditions for all employees regardless of their individual differences that make it possible to fully develop their personal potential and also solution of problems that may arise in meeting the individual companies and national cultures. It is therefore very important to find a way of respect, tolerance, dialogue and teamwork in order to avoid any misunderstandings and conflicts (1).

This solution can also lie in the defining of a code of ethics, or in the creation of rules that determine how, which way, and why to use the code under the terms of coexistence of several subcultures. It is necessary to create such a directive which contains plenty of common moral principles, which can become the basis for the adoption of general ethical standards, while respecting national, cultural differences and practices. Defining a code of ethics can be considered in terms of multiculturalism as an efficient instrument for elimination of fundamental problems arising from the diversity of cultural and social circumstances of individual employees. The introduction of moral principles common to all employees helps to redefine ingrained and learned forms of behaviour and to create in a company a quasi new fellowship of people led by the same rules of behaviour, regardless of their cultural and social conditions.

Before we move on to the defining and analysis of the issue of codes of ethics, it is necessary to answer the question of what the multicultural is. In general it can be stated that multicultural is linked to the existence of an infinite diversity of languages, religions, cultures and ethnicities in the world. Multiculture is a term that is used as a synonym of multiculturalism. It results from the culture relationships in a globalized world and it pertains race, ethnicity, socio-cultural groups, majority and minority relationship and today it includes also the themes of gender, sexual preference or social self-realization of handicapped individuals. Multiculture means not only the diversity of cultures, their expression in behaviour, and their traditions, values and norms, but also search for the ways of coexistence - from the existence side by side, to the respect, tolerance and dialogue and collaboration. The idea of multiculturalism and the resulting political activities arose in the second half of the 20th century (2).

R. F. Murphy (1990) defined five basic principles that are considered to be relevant in the conditions of multicultural and multinational context: integrity, honesty, truthfulness, respect and empathy. All these principles should be applied also in the Slovak market.

Elementary principle of multiculturalism is the consideration of the culture of any group as equivalent, so all cultures are equal and equivalent, irrespective of their economic and social conditions. Multiculturalism, i.e. confluence of cultures is not a mere existence of



different cultures side-by-side, but also the effort of understanding between cultures and the need to learn to live together. On the other hand, multiculturalism can lead to legitimization of inequality and oppression. Therefore, the discussion of the need, benefits and limits of multiculturalism does not always have a clearly positive nature. The idea of multiculturalism began to be considered as an instrument for targeted overcoming of cultural differences and the pursuit of intercultural communication has become one of the ways to prevent an emerging tension between the majority and minority society. Multiculturalism and thus intercultural understanding can be developed only in an atmosphere where there is a sense of security. Cultures that meet together and communicate with each other must feel that they do not compromise each other, and that only prejudices, customs and ideologies are actually in the background of any conflict. Diversity and differentiation of cultures is still growing and varied cultural groups are meeting more often (3).

On the other hand, it should be emphasized that the need to create some kind of common ethical behaviour rules is not only a matter of multicultural companies. Basically, every company must (or should) be guided by ethical rules. The issue of business ethics, therefore, did not appear with the emergence of multicultural companies. It is much older. The business ethics came into existence in the early 20th century, when it was necessary to create a positive image of the business. The first attempt to build the foundations of business ethics were before World War I and were associated with a critique of capitalism, socialism and the expansion of the distribution of wealth (4). Business ethics is currently a rapidly evolving discipline, the importance of which is growing due to unresolved issues of international trade and developing economic globalization. It faces a difficult task - to find in such a company enough common moral principles which will become the basis for the creation of generally accepted ethical standards, while respecting cultural differences and practices (5). It may also be noted that the reasoning of the need of ethical corporate behaviour has, naturally, also its economic backgrounds. The economic justification of why it is important to behave ethically consists in the reduction of transaction costs, in enhancing employee loyalty, in establishing and reinforcing the corporate image, in strengthening the customer satisfaction, in contributing to the loyalty of investors, in contribution to the profits, in cultivation of the business environment (5).

### **Legal context of codes of ethics**

In analyzing the issue of codes of ethics, we must of course deal with the question of their connection or relation to the legal norms existing in society. Rules of law of any modern society are the foundation on which every human behaviour must be constructed. Rules of law represent some kind of general social consensus, certain agreed rules of conduct, violation of which is not only undesirable, but even directly sanctioned by the state. Rules of law are an essential element of the law. They are generally binding rules of conduct for the entire society. They are issued by the state authority in the prescribed manner and their maintenance is enforceable by a state power. They are highly formalized (6).

In the society, however, the rules of law are not the only regulatory tool. It is not possible and it would be a mistake to consider the law to be a sufficient instrument for regulating interpersonal relationships. Behaviour and actions of people are not enforceable only by laws, it is not possible that the law anticipate all possibilities of behaviour and action in interpersonal relations. Ethics covers a much wider area of the human life as the law. It is not

associated with state power or with any institution. Ethical standards apply generally and indefinitely. They are controlled by a human conscience or public opinion. Violation of ethical standards is punishable only if they also have violated the laws (7). "It is true that what is illegal is also unethical. On the other hand, not everything that is not illegal, it is ethical" (8).

The integrity of society are thus ensured not only by legal, but also by non-legal normative systems (moral standards, religious norms, ethical standards, political standards and so on.) through prohibitions, commands, and permissions and through determining the consequences in case of non-compliance. The law regulates primarily ownership, employment and other social relationships, while ethics regulates the relations between people in terms of good and evil, honesty and dishonesty, that is, in terms of ethical principles. Ethical standards can respond to a new quality of life. Rules of law and ethical standards must be valid simultaneously and must complement one another. Rules of law may not contradict ethical standards. It is said that the law is a moral minimum (9). In general it can be stated that the unethical way of behaviour may be encountered every day, whether in a personal or professional life, or indirectly, by information from the media. The public particularly is sensitive to cases of unethical behaviour committed by public authorities, for example ministers, judges, bailiffs. They are authorities that act on behalf of the State and carry out very important social roles. As very sensitive are also perceived the cases of unethical conduct of companies harmful to their clients, their cheating and lies. This has naturally resulted in the emergence of contempt for companies or their activities.

The expression of looking of large community of people living in a particular territory at the need of certain forms of behaviour is the existence of legislation. They are binding for all, and in the case of disrespect there is a possibility of a direct state enforcement. The legislation reflects the fundamental values of society and defines the basic requirements for the conduct of all the individuals. Its existence is based on the need of the social life of man as one of the basic necessities of life. This need can only be realized in the conditions of society (social group). Society cannot exist and develop without integrity, which is guaranteed by values and normativity. Values and norms, which are expressed in the legislation, therefore hold societies together.

The expression of looking of a certain community, a minority of people at the desired and desirable forms of behaviour in this group are called codes of ethics. They are mainly associated with the implementation of a specific activity by a specific group of people. This includes of course the pursuit of business activities. Ethical codes help to bring the public confidence in the ability, fidelity and proper performance of the duties of a particular profession. Ethical codes are, as opposed to the unwritten rules of ethics, characterized by its internal co-ordinated, structural and functional connection of rules. They contain rules violation of which usually results in imposing of certain disciplinary measures against infringer. Ethical codes do not have the character of legislation, but they create a system of rules of conduct that the members of a certain profession promise to observe (10).

The code of ethics can be defined as "a summary of ethical principles, standards and requirements that are mandatory for anyone who receives it. The Code of Ethics is the concretisation of business ethical values of the company, its vision and mission. By accepting the Code of Ethics the company lays an obligation on an employee not only to act expertly but also to follow the principles of business ethics and to take moral responsibility for their actions. The Code of Conduct should be the compass in deciding and the criterion of

behaviour of every employee of the company” (11). The Code of Ethics is a document that employees (in relation to the employer but also to the employee) can use as an argument supporting and justifying their opposition, if they are requested to act in violation of the content of the Code of Ethics (12).

“The aim of the Code of Ethics is to raise the moral standard of conduct for all employees and to promote ethical development of society. The adoption of a code of ethics inserts the ethics into the corporate culture and management. It specifies the moral space in which everyone who represents the company should move. The Code of Ethics is in favour of all, because it protects the interests of all who work in the company. It also protects the customers, business partners, suppliers, and in general each interest group of society. It is a guarantee that the company is a trusted and reliable partner. The Code of Ethics is considered to be a tool to improve human relations in the workplace, to create an atmosphere for constructive criticism, debate, to improve the company's reputation and to achieve economic growth. It is the application of ethical principles of accountability, integrity, humanism, tolerance and environmental activities in the company” (11).

It is interesting to note that while more than 80% of U.S. companies have developed codes of ethics, in Europe the codes of ethics are rarity in businesses. This "resistance" to the code is particularly evident in the French, Swiss, German and Dutch companies (13).

By the Code of Ethics the company declares the values of its foundations, and presents itself to the outside surroundings, inside the company and to other subjects. It takes the form of a written document that sets out the fundamental principles of ethical conduct applicable to the entire company. It emphasizes that every employee, manager, administrative authority, company owner should identify himself with the code and adopt its principles, as well as be informed about observing the principles (14).

The main function of any code of ethics is the regulation of conduct of individuals or the whole group in accordance with certain ethical standards. The Code of Conduct clarifies what behaviour is expected from the employee in different situations and at the same time it makes it clear that the intention of the organization is to imprint ethical dimensions of employee's work. It is one of the tools for management and leading the people in organizations and is based on voluntary compliance with required moral standard. Code of Ethics helps to resolve conflict situations and facilitates employees to decide what is right and what is wrong. It may also be noted that the Code of Ethics is a document to which employees can appeal in the case that they are asked to act dishonestly. By the adoption of a code of ethics, employees gain a habit to evaluate their actions in accordance with ethical standards. Code of Ethics helps to resolve interpersonal conflicts in the workplace in accordance with the requirements laid down in the Code of Conduct. Code of ethics fulfils in economic life the function of boundaries to maximization of profits (15).

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## INFORMATION SECURITY MANAGEMENT (ISM)

Jarmila ŠALGOVIČOVÁ<sup>1</sup>, Vanessa PRAJOVÁ<sup>1</sup>

### Abstract

*Currently, all organizations have to tackle the issue of information security. The paper deals with various aspects of Information Security Management (ISM), including procedures, processes, organizational structures, policies and control processes. Introduction of Information Security Management should be a strategic decision. The concept and implementation of Information Security Management in an organization are determined by the corporate needs and objectives, security requirements, the processes deployed as well as the size and structure of the organization. The implementation of ISM should be carried out to the extent consistent with the needs of the organization.*

### Key words

*information security, information security policy, asset management of organization, business continuity management, management of intrusion*

### Introduction

Information is inevitable in all kinds of entrepreneurial activities, and must be therefore protected as assets. Information security may be assured in various ways, including related policies, processes, procedures, organizational structures, software programs and hardware equipment able to eliminate many sources of safety jeopardising such as espionage, computer fraud and deceit, sabotage, vandalism, fire or water.

Requirements for information security should cover three areas:

- risks to the organization, including its strategy and objectives, its potential vulnerability and the likelihood of adverse events;
- legislation, statutory, regulatory and contractual requirements that the organization and its contractors must comply with;
- principles, objectives and business requirements for processing the information, that the organization must develop in order to refrain from business failures and to support its activities.

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## **Risk assessment**

Risk assessment must include assessment of the risks size (risk analysis) and its comparison with the determined criteria. This work must be repetitive owing to the possible changes in the conditions of the company operation or with regard to the possible acceptability of risks.

The outcome of the risk assessment may involve:

- limitation of the risk occurrence;
- acceptance of risk and limitation of its occurrence
- reduction of the activities related to a given risk;
- delegation of the risk to another organization (insurance, suppliers).

Management of the organization must define information security policy in compliance with the requirements of the organization, applicable laws and regulations. The policy has to be officially approved, published and communicated to all employees and interested parties. At planned intervals, the policy must be reviewed and communicated to all stakeholders, especially if there have been changes that might threaten its suitability, adequacy and effectiveness.

Information security policy must have its owner, who, besides evaluating, keeps assessing the options of its improvement, including the following issues:

- feedback from stakeholders;
- results of independent reviews;
- state of corrective and preventive actions;
- results of previous reviews;
- changes in the organizational structure that might affect security of information;
- trends in information security vulnerability, including documented cases;
- recommendations for the responsible authorities.

If an organization does not dispose the information security experts, it should outsource external specialists, while involving and systematically training all interested managers, users, auditors, security employees and experts with expertise in such issues as insurance, legislation, human factors and risk management. Our experience shows that it is effective to determine the owner of each piece of property, as well as to systematically verify at planned intervals the safety system and the equipment used.

Special attention should be paid to the external stakeholders of the information security system involved in the risk assessment process, agree with them the process of assessing the potential risks as well as appropriate management and control mechanisms. The latter should cover:

- facilities that will be available to external stakeholders;
- access type to facilities (physical, logical via information, network connections);
- importance, value and criticality of the information provided;
- necessary checks of the information protection;
- identification of authorized staff dealing with information;
- importance of the information confidentiality and possible unavailability;
- seriousness of the potential failure of security measures;
- related legislative protection of information;
- involvement of cooperating organizations.

## **Asset management of organization**

All company assets must be registered and inventoried, and must have an assigned owner responsible for its protection. The documentation must also include the information necessary to cure the crash.

The assets of the organization comprise:

- information (databases, data files, agreements and contracts, research results, training materials, audit results, operational instructions etc.);
- software files;
- technical equipment;
- services (computer and communication, heating, lighting, air-conditioning etc.);
- staff and their qualifications, skills and experience;
- intellectual property (reputation, image of organisation).

It should be underscored that high quality inventory of assets is an important entry to risk management. Rules for handling the property are also important for its security and efficient use, particularly regarding confidentiality, integrity and availability.

## **Operative management**

Organization must ensure the proper and safe operation of information processing equipment, including identification of responsibilities and preparation of documented procedures for the execution of all activities including:

- processing and handling the information;
- backing up all the information;
- scheduling co-operation with other systems (especially when starting and finishing the activities);
- instructions for handling errors and dealing with unexpected events and contacts in unusual situations;
- instructions for safe disposal of incorrect results;
- procedures for restarting the system in case of failure.

Related operating procedures should be regarded as official documents which must be approved by management. This concerns particularly the changes to hardware and approved changes. Experience shows that one of the effective ways of reducing the risk of improper use of hardware is delegation of duties and responsibilities, particularly if the organization deals with an entire chain of issues from development and testing up to standard use.

Another effective measure preventing accidental or deliberate devastation of information is its systematic backup and re-verification, while taking into account:

- importance of back up information;
- need for creating backup copies and their integrity;
- extent and frequency of back up information in accordance with its criticality and the need of users;
- location of back up information (e.g. in-house or at a remote location) and its protection;
- options of re-storing the stored information, including its encryption.

These facts are related to the security of the entire information network, which can work either within the organization or across the world, using also publicly available services. The network managers must be responsible for:

- operation of the entire network rather than for the operation of computer networks;
- management of external equipment, including that at the beneficiary's site;
- data protection and integrity in the public network or wireless systems;
- suitable monitoring of the standard network activity, as well as the attempts to misuse it;
- development of technical security, protection and rules of using network, if necessary;
- development of appropriate operating procedures for data protection, documents, computer environment (e.g. disk) and system documentation from unwanted interference (modification, removal, destruction, disclosure);
- disposal of removed auxiliaries (discs, tapes, etc.);
- protection of the entire system documentation.

### **Control information access**

Organization should establish, document, review and observe the policy of access to information, based on the business and security requirements, while clearly defining the rules for the information use and the rights of its users. Consideration must be given to:

- safety requirements of individual entrepreneurial entities;
- all information used and related risks;
- policy of providing information and principles of its authorization and classification;
- legislative requirements and related contractual requirements;
- requirements of management regarding access rights;
- requirements for periodic examination of access rights;
- revocation of access rights.

An important aspect of the development and utilization of any information system is its security including an operating system, infrastructure, applications, services, purchased products and developed applications. Prior to the formulation and development of system requirements, it is important to agree security requirements and consider potential business damage. Simultaneously, it is important to check the used operating software version, which must be verified by qualified professionals and authorized by management. Only authorized personnel should have access to the source code in case of necessary program changes. The implemented changes should be followed by technical reviews of software applications. Particular attention should be paid to the outsourced software.

### **Business continuity management**

Business continuity management focuses on the consequences of adverse impacts and subsequent recovery after failures due to natural disasters, accidents related to equipment and those caused by bad intention, based on the identification of critical business processes and their impact on the standard operation as well as the analysis of their failure, which should include:

- understanding risks the organisation faces, probability of their occurrence and their impact on the operation;
- identification of all equipment crucial for business processes;
- understanding consequences of interruptions of activities due to failure of business safety measures;
- provision of appropriate insurances;
- introduction of additional preventive controls;
- provision of adequate financial, organizational, technical and environmental resources;



- guaranteeing the safety of workers;
- regular tests and innovation of equipment and implemented plans;
- assurance that business continuity management is a component of the organization's structure and strategy.

### Compliance with legislation

Information security management may be subject to legal requirements; it should be therefore developed in co-operation with legislative advisors. Considered should be also legislative differences between states, as well as intellectual property rights, which may include:

- software products;
- parts of assets;
- licences;
- number of users;
- maintenance interventions;
- disposal of software and hardware;
- auditing system;
- copying information.

Law requirements may also concern proper documentation, records, developed software, patents, brands, personal information and cryptographic measures.

### Conclusion

Statistics prove that the foreign information theft and abuse are becoming a profitable business worldwide. Perfect computer systems pose a significant barrier to illegal activities, yet **there is always a chance to hack and misuse a system.**

Organizations such as ISO, IEC, OECD and IEE have therefore prepared a wide range of standards, guidelines and instructions on how to implement information security management, e.g.:

- *ISO/IEC 27002: 2007 Information technology. Security techniques. Code of practice for information security management*
- *ISO/IEC Guide 73: 2002 Risk management. Vocabulary. Guidelines for use in standards*
- *ISO/IEC 13335-1: 2004 Information technology security techniques. Management of information and communications technology security. Part 1: Concepts and models for information and communications technology security management*
- *ISO/IEC 15408-1: 1999 Information technology. Security techniques. Evaluation criteria for IT security. Part 1: Introduction and general model*
- *ISO/IEC 15489-1: 2001 Information and documentation. Records management. Part 1: General*
- *OECD Guidelines for the Security of Information Systems and Networks. Towards a Culture of Security. 2002*
- *ISO/IEC TR 18044 Information Technology. Security Techniques. Information security incident management*

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**PROJECT COMMUNICATION IN FUNCTIONS, PROCESS  
AND PROJECT-ORIENTED INDUSTRIAL COMPANIES**

Jana SAMÁKOVÁ, Kristína KOLTNEROVÁ, Rudolf RYBANSKÝ<sup>1</sup>

**Abstract**

*The article is focused on the project communication management. Industrial enterprises, which use project management must constantly search the new ways for improving. One of the possibilities is the change of management from a functional oriented to the project-oriented or process-oriented. Process-oriented and project-oriented companies have better project communication management during the all project life cycle. Communication in the project is a very important factor. According to the arguments of several authors, one of the biggest problem is that threaten the success of the project is just the communication. In each project is an important pillar – and that is communication. Only on the base of communication can the project move forward and achieve the target.*

**Key words**

*Project communication, project-oriented company, process-oriented company*

**Introduction**

Nowadays the projects have large dimensions. They need a lot of time and resources to implement. They use a lot of funds and it is unrealistic that each employee drove by itself. Therefore, project managers are responsible for projects. A good project manager must be able to organize resources, to plan and prepare procedures to define cost, schedule, team performance, but in particular must be able to communicate effectively.

What is the relationship between communication and project management? The answer to this question is not simple, because these two concepts are interrelated. Effective

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communication is one of the main elements of project management, and therefore it is necessary to be constantly engaged with communication (1).

### **Project communication management**

**Project management** is a set of principles, methods, and techniques that people use to effectively plan and control project work. It establishes a sound basis for effective planning, scheduling, resourcing, decision-making, controlling, and replanning. Project management principles and techniques help complete projects on schedule, within budget, and in full accordance with project specifications. At the same time, they help achieve the other goals of the organization, such as productivity, quality, and cost effectiveness. The objective of project management is to optimize project cost, time, and quality (2).

**Communication** in project management and in the project is very important point. The common management skill of effective communication is crucial to project success because project management involves formal and informal communication at different levels in the organization. Such communication includes all the activities and behavior by which information or ideas are transferred between the project manager and individuals working on the project. The project manager must give directions, hold meetings, and relay information and ideas to and from the project team members, superiors, clients, contractors, functional managers, other project managers and outsider personnel (3).

Communication is the basis of everything and is thus the key to effective project management. Even in biblical times, the importance of project communication was contained in the chronicle of the Tower of Babel, whereby it was reported that God caused a construction project to fail by interrupting communication through the creation of multiple languages. Without a common basis for communication, any project is bound to fail. Communication is the basis for project performance in any organization. Information is power, and those who have it will hold the key to project success (4).

The project manager's skills and abilities have a great impact on the project communication. For project communication is also important the orientation of company.

### ***Project manager***

Project managers must have the ability to think logically and communicate effectively. Communication in project management takes three forms: verbal, nonverbal and written.

In a project environment, communication refers to the exchange of sharing of messages and information to convey meaning and knowledge between and among the project manager, internal stakeholders, and external stakeholders. The intent and the content of these messages are designed to meet various purposes, including:

- dissemination of records, status reports and other information about the project;
- information-sharing about decisions in order to gain acceptance and hence commitment to those decisions;
- management of project interfaces and systems integration.

A project manager uses communication more than any other element in the project management process to ensure that team members are working cohesively on project problems and opportunities [3].

### Functional, process and project-oriented companies

For project communication has in addition of project manager also great effect the company - orientation of company. There are some differences in the communication functions, processes and project-oriented companies.

- *Functional-oriented company* – every employee has a clearly identified supervisor, each role follows its own goals and pursue, steep pyramid, clearly defined powers and responsibilities (5, 6).
- *Process-oriented company* – teamwork is preferred, soft methods of management and flat organization (5, 6).
- *Project-oriented company* – individuals are grouped into working teams for a limited time according the duration of the project, horizontal management is preferred, team cooperation and horizontal communication (5, 6). Project-oriented companies have specific strategies, specific organizational structures and specific cultures for managing projects, programs and project portfolios (7).

Characteristic criterions for functional, process and project-oriented companies are shown in table 1.

COMPARISON OF FUNCTIONAL, PROCESS AND PROJECT-ORIENTED COMPANIES (5, 6)

Table 1

Criterion	FOC*	PrOC*	PjOC*
Interest centered on:	Activity	Result	Goal
Competence, responsibility:	For operation	For process	For project
Orientation:	To the consequences	To the causes	To the causes
Relationship with subordinates:	Checking, instruction, hard factors	Coaching, soft factors	Coaching, soft factors
Management:	Hierarchical	Lateral	Horizontal
Management controls:	Individuals	Teams	Teams
Organizational management structure:	Steep pyramid	Horizontal (flat)	Horizontal (flat)
Communication	Linearly vertical communication	Horizontal communication	Horizontal communication

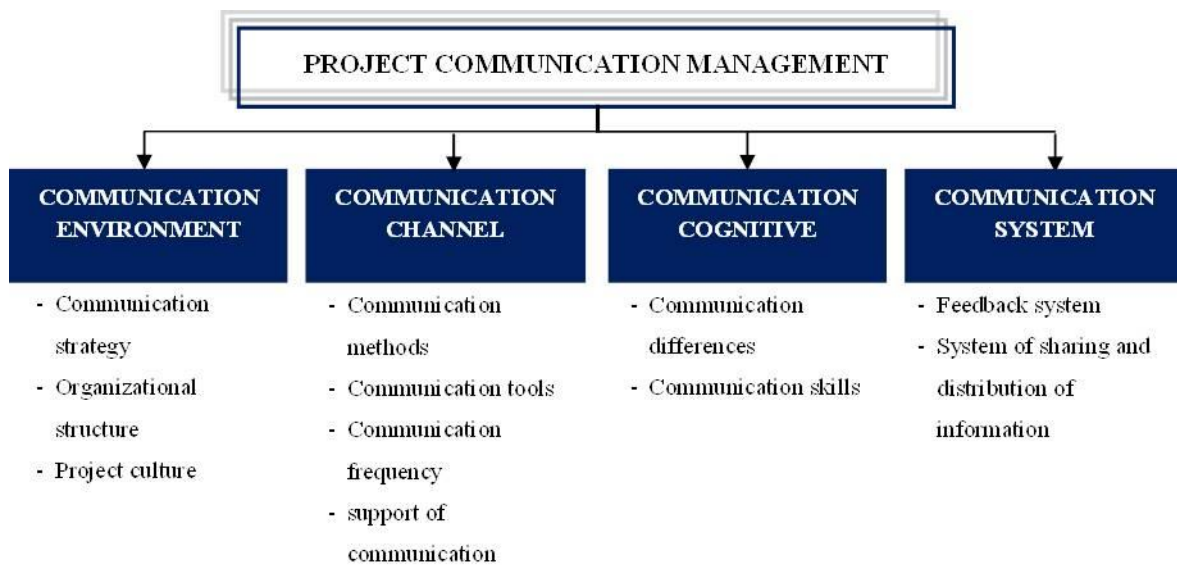
\*FOC – functional oriented company, PrOP – process-oriented company, PjOC – project-oriented company

## **The importance of project communication in functional, process and project-oriented companies in practice**

On the base of theoretical knowledge can be concluded that there are differences in the management of project communication in functional oriented, process-oriented and project-oriented companies. Is this statement valid also for a practice?

### ***System of project communication management***

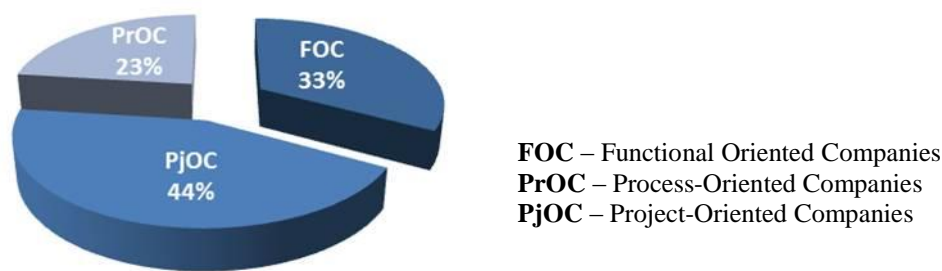
For comparison of functional, process and project-oriented companies in the practice were selected four main areas that should be the part of all project communication management. In each area was defined the typical elements of project communication management (Figure 1).



***Fig. 1 The main areas of project communication management (own processing by 8)***

### ***Survey of project communication management***

These areas and elements were examined using a survey of the current status of project communication management in industrial enterprises in Slovakia in 2012. The survey was participated in 85 small, medium and large industrial enterprises in Slovakia, which were functional-oriented, process-oriented and project-oriented. Percentage distribution of enterprises to functional, process and project-oriented is shown in figure 2.



**Fig. 2** Industrial enterprises in Slovak republic [own processing]

On the base of the survey can be concluded, that all companies inefficient use of the different areas (communication environment, communication channel, communication cognitive, communication system) to project communication management. As show the table 2, the enterprises are dealing with this areas very little or never.

Defined areas of project communication management are the most often dealing in the project-oriented companies, but there are relatively low percentages. This condition is caused because the project-oriented companies are the most aware of the need for a flexible response to changing conditions. Therefore is needed permanent communication. These companies have the best percentage, but they are dealing with defined areas only in a few cases. On the second place are process-oriented companies which achieve the similar percentage as the projected-oriented companies. Functional oriented companies have the lowest percentage.

**PERCENTAGE OF COMPANIES ENGAGED IN THE PROJECT COMMUNICATION MANAGEMENT [own processing]**

Table 2

Are you engaged in the project communication management in following areas?	Functional Oriented Company	Process-Oriented Company	Project-Oriented Company
Communication environment	17 %	30 %	24 %
Communication channel	22 %	27 %	28 %
Communication cognitive	9 %	5 %	10 %
Communication system	41 %	48 %	61 %

On the base of observed results, we can conclude, that an enterprises which wants to realize the successful projects with effective communications should be project-oriented or process-oriented.

Process-orientation and project-orientation are new organization strategies that enhance the competitiveness of companies and enable them to survive in their markets.

## Conclusion

Companies implement process-orientation and project-orientation as organizational strategies often independently, either concurrently or successively. The various methods that are used, the different roles and communication structures that exist and the distribution of responsibilities for implementation among several roles result in a high level of complexity within the company. Obviously, as a result of the above factors, there is a high risk that the implementation of process and project-orientation strategies will fail.

This risk of failure can be mitigated and the degree of complexity reduced by creating synergies between process and project-orientation. Methods, new roles and communication structures can be coordinated to prevent redundancies. Ideally, a company has to take an integrated approach to introducing process and project orientation, if it wants to do so efficiently (7).

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## **QUALITY IN SERVICE MANAGEMENT SYSTEM ACCORDING TO ISO 20000**

Ružena ŠRUBAŘOVÁ<sup>1</sup>

### **Abstract**

*ISO 20000 is a service management system standard. It specifies requirements for the service provider to plan, establish, implement, operate, monitor, review, maintain and improve an service management system. The requirements include the design, transition, delivery and improvement of services to fulfil agreed service requirements.*

### **Key words**

*service management system, ISO 20000, standard, processes, certification, integration, the best practices, quality, service provider, service requirements, specification*

### **Introduction**

Organization must be able to demonstrate quality of service to new and existing customers in order to obtain commercial value in a highly competitive marketplace. Service delivery grows in importance, as customers require increasingly advanced facilities (at minimum costs) to meet their business needs. It also recognizes that services and service management are essential to helping organizations generate revenue and be cost-effective. The ISO 20000 series draws a distinction between the best practices of processes, which are independent of organizational form or size an organizational names and structures.

### **Integration ISO 20000 Standard to Quality Management System**

Over the past few years, organizations have worked hard to address these challenges. Many have embraced the ISO 9000 standards for quality management, which are increasingly required for based operations.

ISO 20000 comprises two distinct documents: a specification for a service management system, and a code of practice. Together, these form a top-down framework to define the features of service management processes that are essential for the delivery of high quality services.

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Achieving ISO 20000 certification demonstrates to other organizations, suppliers, customers, staff, partners and industry bodies that the service provider organization is a knowledgeable, competent supplier. They have shown they have the practices, procedures and management system controls in place to ensure services are provided effectively with to customer satisfaction.

ISO 20000 offers clear financial and operational benefit. It is no surprise, therefore, that over 600 IT service provider organizations throughout the world have already become certified, with a multitude of others preparing for certification. These service providers come from all sectors – not just IT outsourcers providing external services, but internal service providers in finance, manufacturing, logistics, government, utilities and so on.

This is all contained within a quality management system which itself aligns with other pertinent standards such as ISO 9001, ISO 27001 etc.

For companies that have already achieved ISO 9001 or ISO 27001 certification, the management system of ISO 20000 will be familiar. It follows the same plan-do-act-check methodology, linked to customer/business requirements using business metrics and reinforcing continual improvement. It demands the implementation of a management structure and system to provide accountability for every element of service management including a strong reporting structure, clear personal responsibility and supporting documentation. As well as similar standards, it addresses the planning and implementation of the service management system aimed at achieving the goals of improving efficiency and effectiveness, customer satisfaction and continual improvement.

The ISO 20000 series comprises several parts:

**Part 1** is the formal specification and details the requirements for a service management system that enables the service provider to fulfill service requirements and provide value for both the customer and the service provider. It defines the requirements to deliver managed services of an acceptable quality for its customers. This specification is suitable for businesses, that are going out to tender for their services or that require a consistent approach by all service providers in a supply chain. It may be used by service providers to benchmark their level of service management, as the basis for an independent assessment. Organizations need to demonstrate the ability to provide services that meet customer requirement, and they aim to improve services through the effective application of processes to monitor and improve service quality.

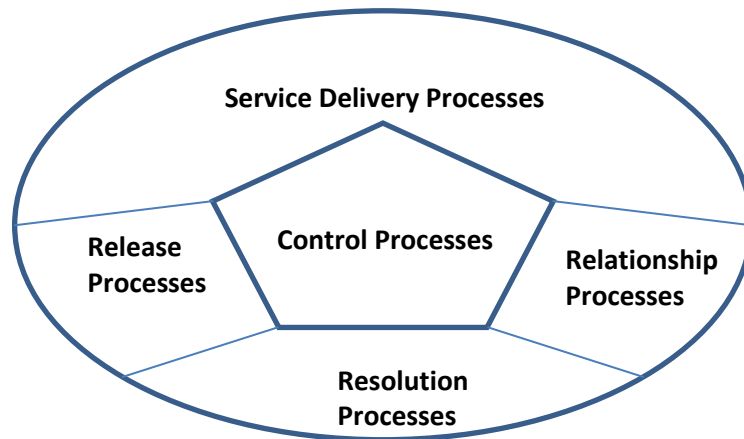
**Part 2** provides guidance on the application of service management systems. It describes the best practices for service management within the scope of ISO 20000-1. It provides more detail about the processes organizations should follow to achieve the requirements laid out in Part 1.

**Part 3** gives guidance on scope definition and applicability of the standard. This is required to help understand the often complex supply chains involved in service management, particularly where many process areas and functions are outsourced.

Various other parts supplement these three with guidance and information on specific aspects and uses of the standard.

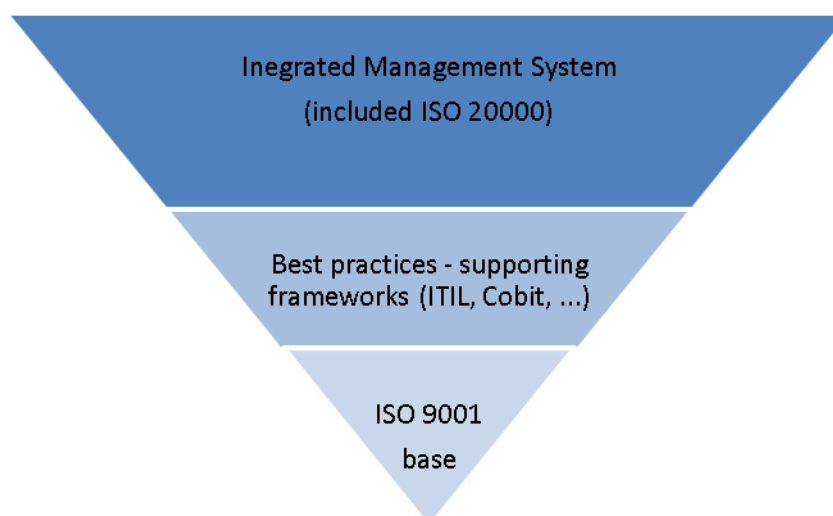
For those companies that have achieved ISO 9001 or similar certification, this core part of ISO 20000 should be reasonably straightforward, with demonstrable, proven management processes and structures already in place. This does assume that the existing system encompasses the activities of service management (especially in the area of IT services) to some degree.

These organizations will then have to consider implementation of the actual service management processes, much of which will already be familiar with. ISO 20000 requirements integrate these service management processes into a service management system and define precise requirements which must meet to giving 'best practice advice' which may or may not be adopted in a particular organization. It is essential that service provider organizations will put in place a good project management plan with accurate timelines and costs for implementing the service management system and associated processes.



**Fig. 1** *Service management processes*

Many organizations will have already gained benefit from adopting some or all of the best practice processes, that provide an ideal grounding for implementing of ISO 20000 service management system. Organizations must implement every one of the service management processes within the context of an integrated service management system and be able to demonstrate to their external, independent auditors that policies are established, processes are documented and that these are followed consistently.



**Fig. 2** *Implementation of Service management system*

It typically takes organizations up to two years to achieve ISO 20000 certification, although this depends on their existing level of capability. The more advanced and mature the existing processes, along with existence of a relevant quality management system, the less effort will be required to integrate them into an ISO 20000 quality management system. Certified service providers are subject to annual surveillance audits and are required to be recertified every three years to ensure ISO 20000 conformance is retained. It is therefore essential to attain buy in and commitment from service management personnel at all levels. Individuals need to understand the value of the proactive culture, to embrace opportunities to improve the relevance and timeliness of provision to the business and, critically, they need to understand why the business is taking this route.

### **Transforming performance and benefits**

Since only companies that have demonstrated they have implemented all of the service management processes within a quality management system framework can become certified, achieving certification provides clear competitive advantage for companies across many sectors including: internal service provider organizations in any sector Outsourcers Application service providers (hosted/cloud solutions) Government contractors. Improving processes, control, audit and documentation of these processes is a key requirement for the many sectors now subject to tight regulations, including: banks, retailers, insurance companies, regulation on insolvency and corporate governance or organizations needing to conform with Sarbanes-Oxley requirements, etc.

For a business, ISO 20000 certification enforces a measurable level of effectiveness and creates a culture of continual improvement. It delivers a multitude of benefits:

**Conformance activity** - Organizations that adhere to the policies and processes of ISO 20000 especially the management procedures have a strong foundation for conformance activity.

**Improved Merger & Acquisition** - Leveraging practices to achieve ISO 20000 certification means that companies have a far better insight into the resources in place and what will be required to support both organic growth and any merged organization. The result is that the right resources can be put in place in time, to maximize the success of the Merger & Acquisition activity.

**Continual improvement** - Companies in this economic downturn want efficiencies now that can be leveraged to support expansion and profitable growth in the future. By enforcing conformance to the requirements, ISO 20000 drives highly effective and efficient management of services and promotes a culture of proactive service delivery that supports continual improvement.

**Demonstrable best practice** - Internal service provider organizations that have achieved ISO 20000 certification are increasingly being heralded as market leaders, with competitors now encouraged to follow suit.

**For the individual** - ISO 20000 qualifications provide an opportunity to build up skills; to evolve beyond generic service management expertise and take companies through the ISO 20000 process. It enables individuals to develop new competencies. There is a demand for skilled ISO 20000 implementers in the market at the present time.

### **Conclusion**

In this marketplace, organizations need to drive down costs. But they also need to build a solid foundation for the future and achieve competitive differentiation, maximize the opportunities provided by merger and acquisition and ensure access to key markets.

For most organizations the people cost is the biggest burden on the budget. Trained staffs who understand the value of a process-oriented culture and work in tightly integrated teams within a recognized quality management system bring great value to the organization. It is the first step to becoming highly effective. The ISO 20000 professional qualification will give the organization a head start in achieving company certification and realizing true value from improved efficiencies and effectiveness.

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## **THE MARKETING AUDIT AS A METHOD OF THE EVALUATION OF THE MARKETING PLAN**

Kamil VAŇA, Ľubica ČERNÁ<sup>1</sup>

### **Abstract**

*The growing complexity of the current market environment needs a more systematic evaluation process of the organizational marketing performance to deal with the dynamic market. This paper deals with marketing audit as a comprehensive assessment of all angles of marketing operation in an organization and also deals with systematic evaluation of plans, objectives, strategies, activities and organizational structure as well as marketing staff.*

### **Key words**

*Marketing audit, marketing plan, marketing plan evaluation*

### **Introduction**

The marketing audit is characterised as a systematic, comprehensive, objective, and independent approach which can assist the manager to understand the working of the individual parts of the organisation and their contribution to the total system geared toward the achievement of the organisational objectives. An empirical study of the marketing audit can provide some insight into management's perception of the benefits of the marketing audit as well as the current procedural aspects of the marketing audit, which are currently lacking in the literature.

In 1967, Kotler identified the marketing audit as something apart from and more comprehensive than the other control efforts of the firm (1). It was indicated that a clear understanding and evaluation of the entire marketing operation would be helpful to avoid dealing with symptoms rather than addressing the fundamental organisational marketing problems.

### ***The present position of the Marketing Audit***

The marketing audit is a generally accepted method of evaluation and a control mechanism of marketing performance. In 1967, Kotler dedicated a full chapter of Marketing

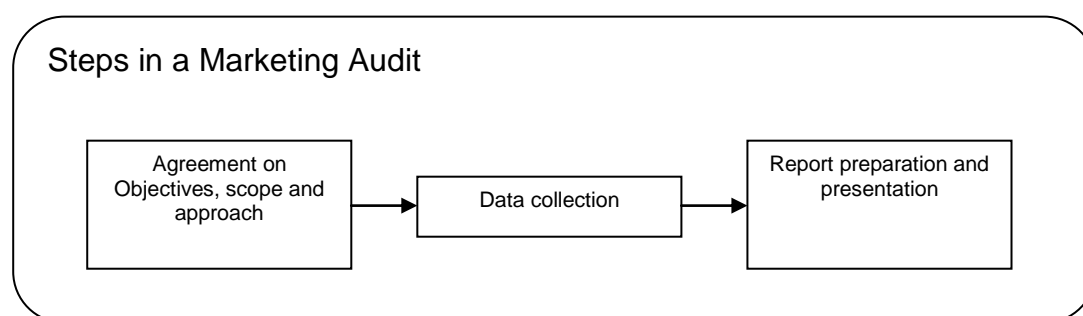
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Management: Analysis, Planning, and Control to the marketing audit and identified it as something apart and more comprehensive than the other control efforts of the firm (2). Ten years later the publication of “The Marketing Audit comes of Age” (Kotler, Gregor and Rodgers 1977) was a turning point in the development of the marketing audit. It provided a definition that after twenty years still remains current. It also suggested the process and the organisation as well as the potential problems in conducting an audit (4). This work has become a major source of reference for many authors who contributed to the further development of the marketing audit. Consumers change of tastes and preferences, accelerating technological breakthroughs, and the increasing intensity of competition in many and especially growing industries necessitated a change of attitude and direction by some companies to incorporate more attacking and defensive measures in the planning and implementation of their marketing efforts.

### ***Steps in a Marketing Audit***

How is a marketing audit performed? Marketing auditing follows the simple three-step procedure shown in Figure.



***Fig. 1 Steps in a marketing audit (3)***

### ***Setting the Objectives and Scope***

The first step calls for a meeting between the company officer(s) and a potential auditor to explore the nature of the marketing operations and the potential value of a marketing audit. If the company officers are convinced of the potential benefits of a marketing audit, they and the auditor have to work out an agreement on the objectives, coverage, depth, data sources, report format, and time period for the audit.

### ***Gathering the Data***

The bulk of an auditor's time is spent in gathering data. Although we talk of a single auditor, an auditing team is usually involved when the project is large. A detailed plan as to who is to be interviewed by whom, the questions to be asked, the time and place of contact, and so on, has to be carefully prepared so that auditing time and cost are kept to a minimum. Daily reports of the interviews are to be written up and reviewed so that the individual or team can spot new areas requiring exploration while data is still being gathered.

### ***Preparing and Presenting the Report***

The marketing auditor will be developing tentative conclusions as the data comes in. It is a sound procedure for him or her to meet once or twice with the company officer before the data collection ends to outline some initial findings to see what reactions and suggestions they

produce. When the data-gathering phase is over, the marketing auditor prepares notes for a visual and verbal presentation to the company officer or small group who hired him or her. The presentation consists of restating the objectives, showing the main findings, and presenting the major recommendations. Then the auditor is ready to write the final report, which is largely a matter of putting the visual and verbal material into a good written communication. The company officer(s) will usually ask the auditor to present the report to other groups in the company. If the report calls for deep debate and action, the various groups hearing the report should organize into subcommittees to do follow up work, with another meeting to take place some weeks later. The most valuable part of the marketing audit often lies not so much in the auditor's specific recommendations but in the process that managers begin to go through to assimilate, debate, and develop their own concept of the needed marketing action.

### **Components of a Marketing Audit**

A major principle in marketing audits is to start with the marketplace first and explore the changes that are taking place and what they imply in the way of problems and opportunities. Then the auditor moves on to examine the company's marketing objectives and strategies, organization, and systems. Finally the auditor may move to examine one or two key functions that are central to the marketing performance of that company in more detail. However, some companies ask for less than the full range of auditing steps in order to obtain initial results before commissioning further work. The company may ask for a marketing environment audit and, if satisfied, then ask for a marketing strategy audit. Or it might ask for a marketing organization audit first, and later ask for a marketing environment audit. We view a full marketing audit as having six major components (7). Each can be semi-autonomous if a company wants less than a full marketing audit.

#### ***Six major components of a marketing audit:***

- *Marketing Environment Audit*
- *Marketing Strategy Audit*
- *Marketing Organization Audit*
- *Marketing Systems Audit*
- *Marketing Productivity Audit*
- *Marketing Function Audit*

### **External and internal Marketing Audit**

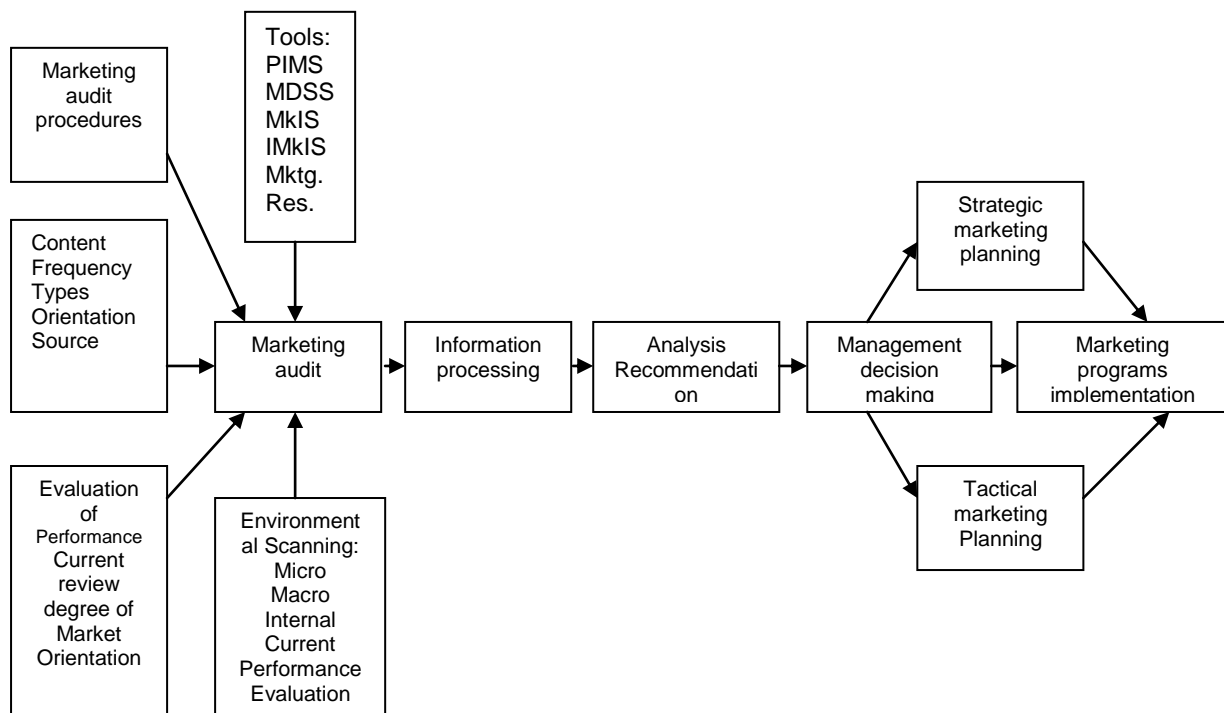
A marketing audit should be done at the beginning of the marketing planning process. It takes a close look at the current business landscape internally and externally. The managers have to decide on which environment they want to focused. But if they want to reach overall feedback and picture of the marketing environment is necessary to do both of the audits.



External Audit focuses on:	Internal Audit focuses on:
<b>Business &amp; economic environment</b> economy fiscal social technological	<b>Sales</b> total sales revenues geographic reach and location type of industry by customer by product
<b>The market</b> size characteristics trends channels customers industry behaviour	<b>Marketing</b> procedures organizations information mix -

### Marketing Audit process

The marketing audit can be given the function of a central intelligence activity responsible for collection, synthesis, analysis, interpretation, and recommendation on all major marketing decisions. The system would utilise all the existing information sources and would combine them with marketing auditing procedures and processes in order to map a complete picture including recommendations, rationale, and anticipated outcome. Figure 1 provides a flow of information from all external macro and micro environments as well as internal sources to the marketing audit function for processing. In this function the marketing audit will maintain progressive, cumulative, and cost-effective information gathering.



**Fig. 2 Marketing audit Process**

The marketing audit, in addition to contributing to the strategic and tactical planning process, will continually monitor the implementation of the marketing programs, and will advise on significant deviations from the planned expectation with recommendations to allow for changes to realign activities. The centrality of the marketing audit will allow managers to use it to develop progressive and comprehensive familiarity with the system within which the business operates and make it possible for it to provide the most informed, reliable, and action-oriented recommendations for decision making on all major issues. Indeed, due to its continuous function and comprehensive and up-to-date nature, the audit can be used to recommend actions as changes occur in the business environment. At the same time, the marketing audit function can react to instructions from management in the provision of specific projects. The system can also provide the facility for progressive marketing replanning in the light of market evolution.

## Conclusion

This paper briefly described the marketing audit as a continual and structured process for the evaluation of the business performance of the company. Marketing audit is in my opinion necessary to use for the gain feedback from the realized marketing actions from the previous planning period before the beginning of the creation new marketing plan. The overall marketing audit can give the company competitive advantage for the further struggling in the present unstructured and fast changing business environment.

## Acknowledgements

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**INNOVATIVE IMPROVEMENT AND INTENSIFICATION  
OF BUSINESS RELATIONSHIPS SUPPORTED  
BY COOPERATIVE NETWORKS**

Viera VANČOVÁ, Miloš ČAMBÁL, Dagmar CAGÁŇOVÁ<sup>1</sup>

**Abstract**

*Nowadays, the opportunity for companies to be involved in cluster initiatives and international business associations is a major factor that contributes to the increase of their innovative potential. Companies organized in technological clusters have greater access to mutual business contacts, faster information transfer and deployment of advanced technologies. These companies cooperate more frequently with universities and research - development institutions on innovative projects.*

*An important benefit of cluster associations is that they create a suitable environment for innovation and the transfer of knowledge by means of international cooperation and networking. This supportive environment is not easy to access for different small and medium-sized companies, who are not members of any clusters or networks. Supplier-customer business channels expand by means of transnational networks and exchanges of experience. Knowledge potential is broadened and joint innovative projects are developed. Reflecting the growing importance of clusters as driving forces of economic and regional development, a number of cluster policies and initiatives have emerged in the last few decades, oriented to encourage the establishment of new clusters, to support existing clusters, or to assist the development of transnational cooperation.*

*To achieve the goals of the Europe 2020 Strategy, European countries should have an interest in building strong clusters and developing cluster cooperation by sharing specialized research infrastructures and testing facilities and facilitating knowledge transfer for cross-border cooperation. This requires developing a long term joint strategy in order to facilitate the development of open global clusters and innovative small and medium entrepreneurs.*

**Key words**

*innovations, cooperation, cluster, economic development, business relationships*

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## **Introduction**

A new trend of success is emerging in the present global business. Presently it is based on the quality, speed of innovations and specialization of global corporations depending on local market requirements. However, innovative activity increasingly depends not only on the quality of inventions and the company's know-how, but also on the ability to utilise effectively the knowledge, skills and resources of others to support its own economic results. Therefore, successful integration into business associations and networks may become one of the key factors of success.

“International partnership, foreign investments and cross-border clusters present optimal ways for making the exchange of knowledge and innovation support technologies and SME globalization easier” (1). The ties between the creators of innovative circle are not of one-direction character. They are interactive. Quality of micro-economic environment depends on what the business or research and development sector produces. On the contrary, motivational elements of micro-environment, as e.g. infrastructure quality, affect forming of the business cooperation climate. Business activity also significantly depends on the macro-environment specified by the legislation of each state. Innovation policy at the national and European level should use its tools to improve micro-economic and macro-economic conditions and strengthen the ties between the scientific community, i.e. universities, research institutions on one side, and the private industrial sector and sector clusters on the other side (2, 3).

### **Designing the model of second level clustering Focused on innovation support**

In order to develop international innovative cooperation, we suggest the second level of clustering that will enable interconnection of the above mentioned subjects from different countries through building the international cooperative network. Innovative strategies of European countries have, to a certain extent, a specific and limited focus. Individual countries cannot be pioneers in all fields of industry. By this reason, the international exchange of experience, transfer of knowledge, common research projects etc. are considered effective (4).

Following the analysis and gained experience, it has been proved that international cooperation can be considered as a significant factor for increasing the industrial enterprises innovative performance. The solution of organizing such cooperation consists in creating international cooperative networks.

The base of the network consists of industrial enterprises who will clearly define their needs following the requirements of the market and their customers. This will enable the research and development to focus on products and services which can be consequently used commercially and reach the expected economic effect.

For industrial enterprises, it is profitable to exist in local sector associations-clusters, because they can provide several benefits. “A significant contribution of clusters is that they create the environment suitable for innovations and knowledge formation. This is the main reason why regions with strong clusters are considered the innovative leaders. These trends are further developed by globalization” (5). One of the priority objectives of clusters is to enable the interconnection of enterprises with universities, research-development institutions, excellence centres, because they have qualified human resources and technological equipment necessary for innovative activities. For reasons given, clusters have been primarily suggested as initiators of building the international cooperative network. They represent mainly the

interests and needs of small and medium enterprises in a given field. At the same time, they are related to innovative institutions, eventually the state and public sector.

Regions and headquarters should use the benefits of financial tools available at the level of the Association in order to strengthen their clusters and enable them for transnational cooperation. “It is expected that the European cluster memorandum will set the conditions for discussion on common fields that should be supported by mutual effort at the regional, national and European level” (6).

Significant role in local networking is played by universities and colleges that may participate in building the innovative environment with following activities:

- spin-out of research projects leading to creation of new companies,
- licencing of technologies for new companies,
- realization of cooperation projects between universities and industrial sector (e.g. common financing of research),
- publication of articles on research and knowledge transfer,
- continual training of graduates with new skills and knowledge.

### **Basic scope of building and keeping the cooperation network**

Building the mechanism of cluster cooperation support and other institutions for development of innovations is a tool that can improve the conditions of effective and sustainable transnational cluster cooperation within the frame of Europe. Creating such platform to improve the conditions of mutual cooperation between innovative subjects in the European countries, so called second level of clustering, can lead to effective utilisation of own innovative capacities and improvement of competitiveness (7). Moreover, there is a positive effect on effective cooperation in the long-term horizon and strengthening the position in the European economic space.

Main goals of the network are following:

- strengthen the synergy between partners in the network by means of providing the integrated services: e-business,
- provide the transfer and exchange of information, knowledge and know-how of clustered members and create the permanent information ties between partners,
- mediate sharing of specialized research infrastructures,
- increase the transfer of technologies,
- implement innovations faster and lower the risk ,
- increase awareness, mainly among SME, in the field of searching for common innovative solutions including increase in environmental awareness,
- consult with enterprises and prepare attitudes in the direction of national and European politics on the ground of their needs,
- sustain and constantly improve the approach, proximity, quality and professionalism of integrated services provided by the network,
- minimize the administration and traffic load for all participants involved in networking.

The functioning of cooperative network should be controlled by certain relations. If they are followed in a proper way, international cooperation is effective. The following points are considered essential:

- mutual independence – members are not dependent, they can leave at any time,
- mutual preference – members prefer each other in contracts to non-members,

- equal status of members – none of the members is superior to another one.

Simultaneously, networks should create the internationalization strategy, which would enable them to operate more effectively. We suggest that the stated strategies should contain:

- identification of priority target markets (where?),
- specification of economic and scientific goals (why?),
- preparation of measures to reach the goals (how?),
- elaboration of time and action plan (when?),
- mapping of potential partners (who with?),
- calculation of costs and resources of network asset coverage (how much?).

Options of the cooperative network should be available to all companies regardless of whether they operate in production or service providing. It means they should be available to all participants as SME, research institutions, technological institutions, universities, technological and business centres and innovative growth agencies. Network can help the clients with their searching for business partners, especially in the countries they have not cooperated with so far, providing individual visits the place for the purpose of company needs evaluation, exchange programmes and excursions in order to transfer knowledge and provide consultation in the wide area of business issues. A well-established database of enterprises and innovative institutions processed by clusters enables different contact points to keep in touch and collect offers and requests for the establishment of connections.

Effective management of international cooperative network activities should be beneficial for retrieval of solutions in order to increase the competitiveness of small and medium sized enterprises primarily associated in cluster subjects operating in Europe. The following contribution should be achieved:

- Globalization of cluster cooperation and their networking will contribute to the development of entrepreneurship and contract activities of small and medium enterprises clustered within.
- Transnational cooperation of clusters will enable qualified specialists to cooperate closely in common innovative projects.
- Networking of industrial clusters in the international context will contribute to the increase of cooperation level regarding the participants involved in the innovative circle, i.e. small and medium entrepreneurs, universities and research – development institutions.
- Subsequent reaction to establishing the cooperative relationships between innovative subjects is presented by drawing attention to clusters and building their international image.

When enterprises join the international cooperative networks, increasing their innovative potential can introduce these particular benefits:

- grow of organisation's competitiveness,
- acceleration of offered products and services innovations,
- enabling customers and business partners to join the innovative process,
- improvement of relationships with business partners,
- improvement of the organisation's positive image.

Evidence of the fact that companies associated in clusters and networks prosper markedly on international markets was also proven by the research of the Institute for innovations and technologies carried out in 2007. "According to this research, 65% of these companies

showed significant business development abroad in comparison with the companies operating independently” (8).

“Building partnerships, which are considered the keystone of international cooperation and develop mutual trust, is also highly recommended by Organisation for economic cooperation and development. When managing clusters, openness should be increased and allow new members to come up with new knowledge, resources, technologies and experience, as well as support the interconnections with international structures” (9).

## Conclusion

This paper presents the concept of developing the cooperative relationships mainly through creation of a functioning network of universities, research institutions and sub-suppliers in a certain industrial branch. The purpose of this network is to realize and build partnerships. Following its formation, research projects can be created concerning particular industrial branches in cooperation with all participants. The purpose of the network is to join regions, clusters, enterprises and specialists from the academic sector.

It is not only the financial support, but also the relationships and cooperation between the subjects of innovative circle that can be included among the most important factors in building the innovative economics. Therefore, it is necessary to start fulfilling already adopted strategies to support development of economics through top leaders and so support entrepreneurship and competitiveness of business subjects.

This paper has been written within the solution of scientific-research projects VEGA reg. number 1/1059/11 „Barriers of Knowledge Distribution from Universities to Business“ and VEGA reg. number 1/0787/12 „The identification of sustainable performance key parameters in industrial enterprises within multicultural environment“.

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## **BRINGING EXCELLENCE TO AUTOMOTIVE**

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### **Abstract**

*Market situation and development in recent years shows, that organization's ability to meet customer requirements is not enough. Successful organizations are able to exceed the expectations of all stakeholders. They are building their excellence systematically. Our contribution basically how the excellence in automotive is created using EFQM Excellence Model in Total Quality Management.*

### **Key words**

*Quality Management System, Total Quality Management, EFQM Excellence Model, Fundamental Concepts of Excellence, RADAR logic*

Global recession, which is presented by downturn in economic activity in many countries, is in Slovakia felt too. First of all it is the growth of prolonged unemployment, then rising interest rates and significant growth of debt. Most of fiscal stimulus needed necessary to improve the situation are stopped because of budget cuts related to contribution to the European bail-out fund – mechanism, that should rescue Euro in European sovereign-debt crisis. In the time of economic crisis Slovakia remains stable in many indicators. At least it seems to be so. GDP - real growth rate reached +3,3 % in 2011 (+4 % in 2010). And although the consumption of long-term goods decreases in the time of recession, in Slovakia there is the automotive sector first, that holds the country in the zone of growth. But is quality nowadays still one from key elements, which is able to bring the success?

The situation on the market full of competition shows basically, that ability to comply with standards and statistical methods for monitoring are not sufficient. Success today is much more linked to key factors such as innovation, customer experience, process optimisation, creativity, employee engagement, change management, diversity, resource planning, flexibility, sustainability etc. There are many different kinds of tools and models,

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which are designed to help organisation to manage many of these factors effective, but the most complex of them is EFQM Excellence Model.

EFQM represents the name of a non profit foundation (European Foundation for Quality Management), based in Brussels, which was formed in 1988 by a group of leading European organisations.

EFQM Excellence Model is model created by EFQM and is based on premise, that excellent organisations achieve and sustain superior levels of performance that meet or exceed the expectations of all their stakeholders. To achieve sustainable success, EFQM provides guidance through a set of three integrated components:

1. *The Fundamental Concepts of Excellence* are represented by underlying principles which are the essential foundation of achieving sustainable excellence for any organisation.
2. *RADAR logic* is a simple but powerful tool for driving systematic improvement in all areas of the organisation.
3. *The EFQM Excellence Model* which is designed to create a framework to help organisations to convert the Fundamental Concepts and RADAR thinking into practice.

Sustainable success is then achieved in intersection area of all three components.

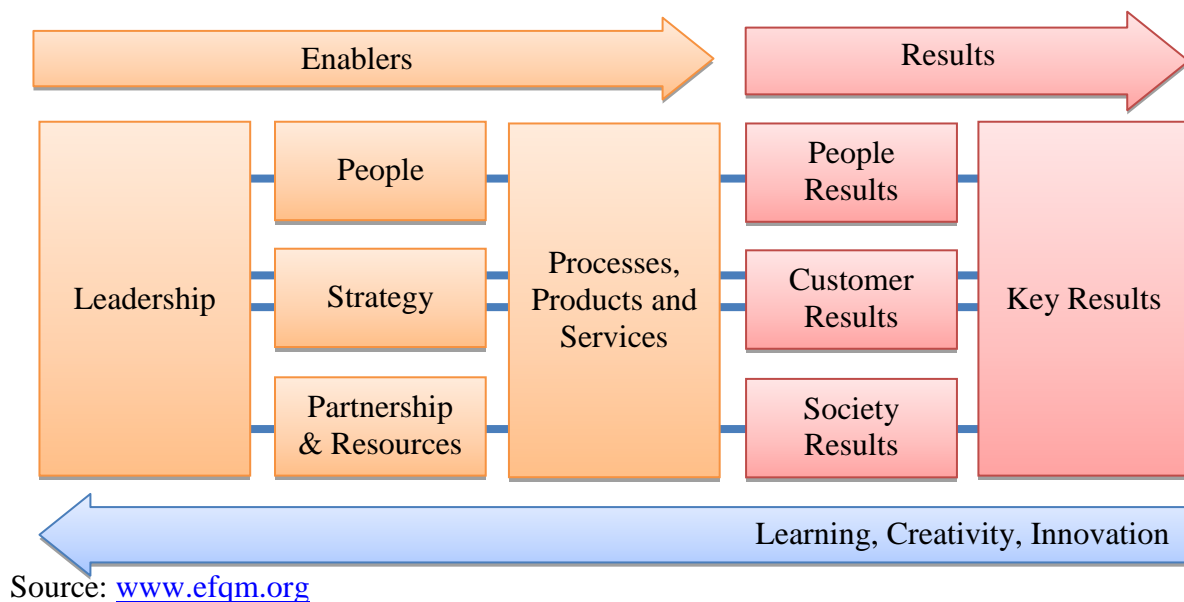
The Fundamental Concepts of Excellence are represented by these concepts:

1. Achieving balanced results - excellent organisations meet their mission and progress towards their vision through planning and achieving a balanced set of results that meet both the short and long term needs of their stakeholders and, where relevant, exceed them.
2. Adding value for customers - excellent organisations know that customers are their primary reason for being and strive to innovate and create value for them by understanding and anticipating their needs and expectations.
3. Leading with vision, inspiration and integrity - excellent organisations have leaders who shape the future and make it happen, acting as role models for its values and ethics.
4. Managing by process - excellent organisations are managed through structured and strategically aligned processes using fact-based decision making to create balanced and sustained results.
5. Succeeding through people - excellent organisations value their people and create a culture of empowerment for the balanced achievement of organisational and personal goals.
6. Nurturing creativity and innovation – excellent organisations generate increased value and levels of performance through continual and systematic innovation by harnessing the creativity of their stakeholders.
7. Building partnerships – excellent organisations seek, develop and maintain trusting relationships with various partners to ensure mutual success. These partnerships may be formed with customers, society, key suppliers, educational bodies or non-governmental organisations.
8. Taking responsibility for a sustainable future – excellent organisations embed within their culture an ethical mind-set, clear values and the highest standards for organisational behaviour, all of which enable them to strive for economic, social and ecological sustainability.

RADAR logic is based on the 4-step process:

Firstly organisations should define their results (R), which they want to achieve as a part of their strategies. Then they should plan and develop approaches (A), which will deliver these results. As a third step they need deploy (D) their approaches systematic and finally they have to assess and refine (A) (R) the approaches based on analysis of the results achieved and learning activities.

Finally the EFQM Excellence Model consists of 9 criteria – 5 for enablers and 4 for results. Model helps managers to understand the cause and effect relationships between what their organisation does (the enablers) and the results it achieves. To achieve sustained success, organisations need strong leadership and clear strategic direction. They need to develop and improve their people, partnerships and processes to deliver value-adding products and services to their customers as in relations next figure shows.



Source: [www.efqm.org](http://www.efqm.org)

**Fig. 1** EFQM Excellence Model 2010

In enablers criteria:

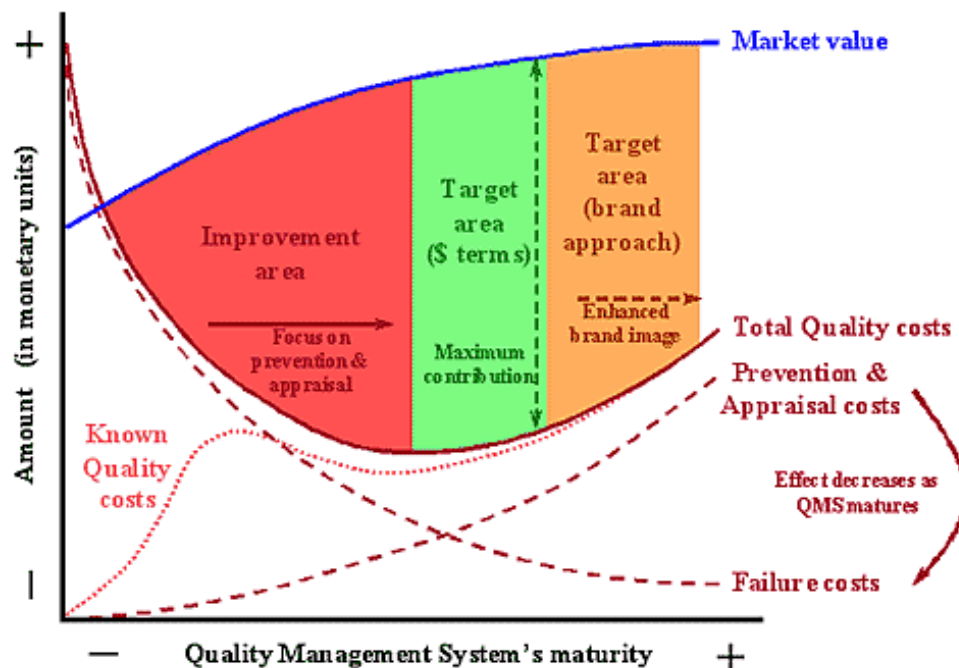
1. Leadership – excellent organisations have leaders who shape the future and make it happen, acting as role models for its values and ethics and inspiring trust at all times. They are flexible, enabling the organisation to anticipate and react in a timely manner to ensure the ongoing success of the organisation.
2. Strategy – excellent organisations implement their mission and vision by developing a stakeholder focused strategy. Policies, plans, objectives and processes are developed and deployed to deliver the strategy.
3. People – excellent organisations value their people and create a culture that allows the mutually beneficial achievement of organisational and personal goals. They develop the capabilities of their people and promote fairness and equality. They care for, communicate, reward and recognise, in a way that motivates people, builds commitment and enables them to use their skills and knowledge for the benefit of the organisation.

4. Partnership and resources – excellent organisations plan and manage external partnerships, suppliers and internal resources in order to support strategy and policies and the effective operation of processes.
5. Processes, products and services – excellent organisations design, manage and improve processes to generate increasing value for customers and other stakeholders.

In criteria of results excellent organisations:

- Develop and agree a set of performance indicators and related outcomes to determine the successful deployment of their strategy and supporting policies, based on the needs and expectations of their stakeholders.
- Set clear targets for Key Results based on the needs and expectations of their stakeholders, in line with their chosen strategy.
- Demonstrate positive or sustained good results over at least 3 years.
- Clearly understand the underlying reasons and drivers of observed trends and the impact these results will have on other performance indicators and related outcomes.
- Anticipate future performance and results.
- Understand how the Key Results they achieve compare to similar organisations and use this data, where relevant, for target setting.
- Segment results to understand the experience, needs and expectations of specific stakeholders.

We have to say, that it is no easy to build system for effective implementation of the EFQM Excellence Model. Ability to develop all The Fundamental Concepts of Excellence is determined by organization's level of maturity in relation to the quality system. And in addition to the ability to develop Concepts of Excellence, there is still the financial aspect. According to well known model of total quality costs (figure 2), when a Quality management system (QMS) is young, one euro invested in prevention produces much more than one euro in savings because of a strong drop in failure costs.



Source: Garriga E.: Facing crisis through quality: Back to basics

**Fig. 2** *Impact of QMS maturity on brand and financial results*

As the QMS matures, that same euro invested in prevention does not produce as much of a benefit. In fact, at the some point, the investment in quality costs more than the value it gives the product, except perhaps in brand image.

Implementation of EFQM Excellence Model is most often associated with higher level of QMS maturity, so its impact is reflected primarily in enhanced brand image. Although the development of all principles of excellence helps organisation to achieve competitive advantage, we should keep in mind its potential in the area of financial results. This point of view is important especially today, in time of economical crisis.

Automotive was always sector of innovation and not only in technology, materials or technical solutions, but also in area of management, marketing or quality approach. Most of TQM models and tools were developed exactly there. Today organisations of automobile and supplier industry create networks with objective to intensify exchanges of ideas and experiences between the companies such as Network of Automotive Excellence (NoAE) and many others.

It is difficult to implement EFQM Excellence Model in organisation and it is even more difficult to develop system by achieving excellent results. This can be achieved only if the QMS and management of organisation are the single entity. Automotive shows, that this principle is possible. Many award or prize winners from automotive in European Excellence Award or in Slovakian National Quality Award prove it. From all participants we can present organisation such as Robert Bosch GmbH (from Germany) – the EFQM Excellence Award 2011 Price winner in Leading with Vision, Inspiration & Integrity and Managing by Processes, or the finalist Bosch Car Multimedia from Portugal. Fact, that we can find for example BMW AG Werk Regensburg between companies recognised for Excellence 5 stars in EFQM, is no surprise. In Slovakia, it is the company HANIL E-HWA AUTOMOTIVE SLOVAKIA, s.r.o. delivering parts for Kia, Hyundai or Volskwagen, that was awarded in Slovakian National Quality Award in 2010.

But the interest of customers is still the highest award to all organizations that build their excellence.

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**EFFECTIVE TOOLS FOR CONFLICT RESOLUTION  
IN MULTICULTURAL TEAMS IN INDUSTRIAL ENTERPRISES**

Veronika VIDENOVÁ, Martin BELUSKÝ,  
Dagmar CAGÁŇOVÁ, Miloš ČAMBÁL<sup>1</sup>

**Abstract**

*The aim of this paper is to highlight the issue of resolving conflicts within multicultural teams in industrial enterprises. The authors build upon the concept of multiculturalism which seeks for possible ways to enable different cultures to coexist and the means of communication between them. In the introduction, the authors explain the importance of increased attention and interest in the area of multiculturalism. Industrial enterprises nowadays are increasingly aware of this issue as they become more open to different cultures and they are confronted with intensive international migration and previously isolated societies become more pluralistic. As a result of these processes, individuals are more frequently in contact with members of different cultures.*

**Key words**

*multiculturalism, interculturality, conflict resolution, culture*

**Introduction**

“If we seek to understand people, we have to try to put ourselves, as far as we can, in that particular historical and cultural background. It is not easy for a person of one country to enter into the background of another country. So there is great irritation, because one fact that seems obvious to us is not immediately accepted by the other society or does not seem obvious at all. One has to recognize that countries and people differ in their approach to life and their ways of living and thinking. If we wish to convince them, we have to use their language of the mind.” (Nancy J. Adler)

The submitted paper discusses the current issues of multicultural/intercultural management, through the discussion of culture and its implications on management and resolve conflicts within multicultural team in industrial enterprises. The topic of interculturality has become more important and relevant than it was in the past, this is especially so since 2004 when Slovakia joined the European Union. Industrial enterprises

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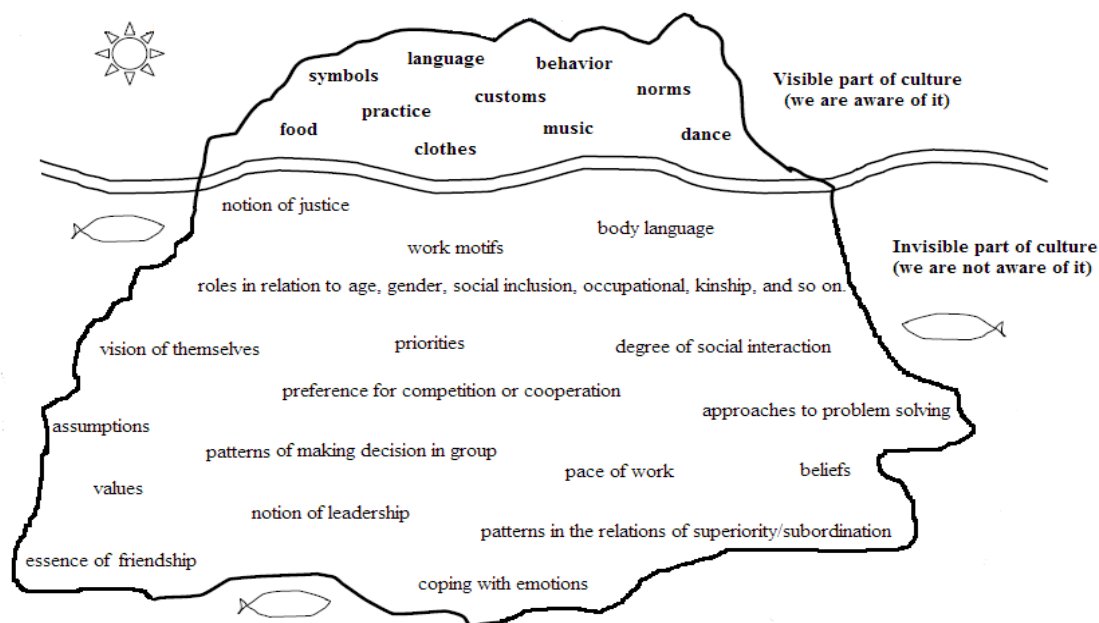


nowadays are increasingly aware of this issue as they become more open to different cultures and they are confronted with intensive international migration and previously isolated societies become more pluralistic. As a result of these processes, individuals are more frequently in contact with members of different cultures and there is assumption that this creates a number of various conflicts. The conflicts have always been around us and always will be in our life. Its primary task is assisting the management in the small and medium-sized enterprises.

This paper builds upon the theory of knowledge processing and its role as a theoretical basis for knowledge development in the area of multiculturalism. Furthermore, it teaches us to be tolerant towards others, their habits, culture and history. "Strangers" can be a source of experience for us and they can enrich our personal lives. Discussion of the issues surrounding multiculturalism and also the identification of sustainable key performance parameters within multicultural work environments can contribute to more effective conflict resolution in the workplace and promote awareness towards the tolerant coexistence and social cohesion. The paper is a part of the submitted VEGA project No. 1/0787/12 „The identification of sustainable performance key parameters in industrial enterprises within multicultural environment (8).

### **Understanding of cultural**

**Culture** as a concept has many definitions and there is no single agreed definition of culture. It is commonly defined as a set of habits, relationships, feelings, art and other features that characterise a society or social group. These features regulate the behaviour and communication of culture. Culture is created of shared history, experiences, traditions and social customs. It is how we behave as individuals and in groups. Sometimes the culture is considered to consist only of those parts that are visible. However, they lose their meaning without knowing the other parts of culture. They are not easily accessible. Authors consider that culture consists of two equally important parts - directly visible and invisible parts. Culture can be compared to the iceberg. A small part of it is above the water surface, but much larger part is hidden underneath water surface. Authors claim, it is very important to know especially this part of culture. International managers need research into culture because they need to be able to predict what behaviour is typical in routine situations and how members of the culture group will behave in such situations. They should know both parts of culture. Generally, it could be said, that it is recommended for managers and others people to be attentive to both parts of iceberg, as what is perceived on the surface has its roots in bottom part (5).



*Fig. 1 The cultural iceberg [4]*

The arrival of many foreign investors raises the important requirement - to build a corporate culture respectful of the natural Slovak working environment, but also embrace differences, brought by foreign investors. **Corporate culture** can be defined as a set of attitudes and behaviour towards its employees and stakeholders. It is mostly reflected if another competitor enters the market and in case of a merger. Mergers of companies, each coming from different cultural backgrounds can sometimes be troublesome, not only for employees, but often also with regards to the companies financial position. In this context, it is highly appropriate to apply the principles of intercultural education. The globalisation of business has broadened interest in the intercultural and multicultural dimensions of management. It is necessary to understand the meaning of these terms and differences between them. Globalisation is a process whereby worldwide interconnections in virtually every sphere of activity are growing. Some of these interconnections lead to integration/unity worldwide; others do not (4).

The main difference between intercultural and multicultural management is defined below. According to authors, this paper is necessary in order to define and know this concept and differences for understanding this issue:

- Intercultural management is the most dynamic term of these focusing on the interaction between cultures on an interpersonal level, for example researching how the member of one culture is adjusting and acting in another culture.
- Multicultural management research focuses on several (usually more than two) cultures living side by side and deals with basic psychological processes.

### **Resolving conflicts within multicultural teams in industrial enterprises**

More and more often, we enter into relationships with other people from diverse culture backgrounds and environments. This can cause the emergence of various conflicts of ignorance of other people and cultures. When people think of the word conflict, they often think of wars or violence. However, conflict exists at all levels of society in all sorts of situations. It is easy to forget that we experience conflict every day of our lives. Conflict

happens when two or more people or groups have, or think they have, incompatible goals. However, in most cases we resolve the conflict. From a personal level to international level, good communication is usually used to overcome differences and to reach an agreement before violence breaks out. At a personal level, we often do not realise we are overcoming our differences. It is important to remember that conflict can be creative. While a conflict starts because of an issue of disagreement, there are usually background influences that fuel the conflict. The most important influence is power. Others include culture, identity and rights.

If we want to prevent such conflicts it is useful to know the concept of intercultural competence. **Intercultural competency** is an ability to understand cultural differences, and to utilise this understanding to work effectively and successfully with members of other cultures (2).

### **Resolving conflicts at work**

Every society, organization, group, and family creates a culture of conflict, a complex set of words, ideas, values, behaviours, attitudes, customs, and rules that powerfully influence how its members think about and respond to conflict. Cultures of conflict are shaped in and by our experiences. Every workplace and organization, school and neighbourhood, family and relationship generates spoken and unspoken rules about what we should and should not say and do when we are in conflict. Each of these entities produces a separate and distinct culture that exerts enormous pressure on us to respond to conflict in traditionally expected ways. We often hear managers argue that conflict resolution and effective communication take too much of their time or that it costs too much to conduct a retreat at which employees work on improving their communication skills and resolving their disputes. But consider how much time and money this organization wasted by not addressing its unresolved conflicts and how little time it took to set things right (7).

### **Outdoor methods and Tuson's model as effective tools for conflict resolution**

There are a lot of possibilities how we can resolve conflicts, but the best way is to prevent conflicts before they happen. The training focused on skills development in this area can help to reduce interpersonal misunderstandings, bring new ways of conflict resolution and harmony in the workplace and thereby also increase productivity. The authors focus on the "outdoor method" as an actual phenomenon, which is used in teaching the topic of tolerance towards cultural diversity. The ability to understand and accept the cultural differences is increasingly important in common working environment. It helps to create the interconnection between how the differences are emotionally perceived and how they are rationally processed. In practice, we can find many courses offered in the field of multiculturalism and businesses that decided to invest in raising awareness of their employees through various learning programs have understood the importance of creating friendly working conditions within multicultural teams that consequently leads to motivation and performance increase. The training aimed to develop intercultural tolerance skills can reduce interpersonal misunderstandings, as well as bring new ways of conflict resolutions on the workplace.

### **Outdoor methods**

Working life, very similar to a personal life, has its brighter and darker sides. After a certain time the working team can just like a couple slip easily into the stereotype and routine, or the exhaustion of unsolved conflicts and persistent problems can occur. Outdoor methods

are recently the most used among training methods with focus on gaining intercultural knowledge. Through creating the trustful atmosphere at outdoor activities, the working team starts to open towards the needs of all individuals who are then able and willing to point out the conflict reasons and they are ready to try to find the best ways out. The outdoor training programs are based on a theory of “experimental learning” or so called “adventure learning”, which means acquisition of knowledge through you own practical experience. The firsthand experience is the best remembered one and better used in everyday life (7).

**Essential features of outdoor training are:**

- dynamic training programmes based on first hand experience,
- model situations and real situations solving,
- active participating within small groups,
- inspirational natural surroundings.

**Advantages (strengths) of outdoor programmes:**

- The creative approaches are developed to eliminate automated activities and routine.
- Developing of fulfilled relationships rather than just formal structures.
- Active behaviour rather than passive soaking of information.
- Include the analysis and feedback.

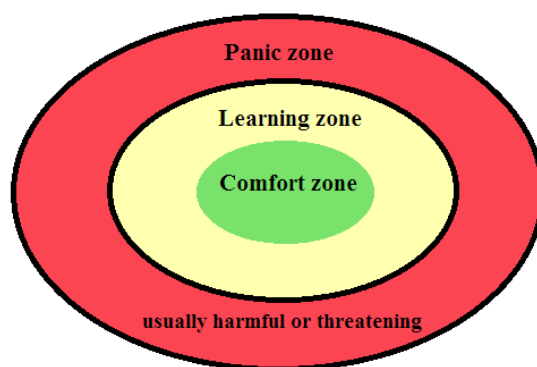
**Tuson’s model**

Every action promotes reaction and different reactions than expected can after some time reflect in uncertainty or reducing of reassurance. Resolving conflict often depends on the skill of a leader. The Tuson’s model gives low priority to efficiency (doing things right) but high priority to effectiveness (doing the right things). The authors of this paper characterize Tuson’s model according to three zones (1):

**“Comfort zone”** – it is the zone in which an individual feels safe, and is familiar with the environment, people and the ways of working. But it is also an environment where he does not learn anything new, since he acts based on his previous experience and knowledge and primarily he does not feel the need to change anything.

**“Learning zone”** – or so called **“stretch zone”** – is represented by the space where an individual hits his current limits of abilities and skills and finds out they can be developed beyond those borders. In most cases the impulse for changing the way of acting or stepping out from worn out track comes from internal or external environment.

**“Panic zone”** – usually means crossing the current limits of an individual and from the perspective of gaining knowledge and skills there is no way further, because of the risk of regression, resulting from bad experience and fear.



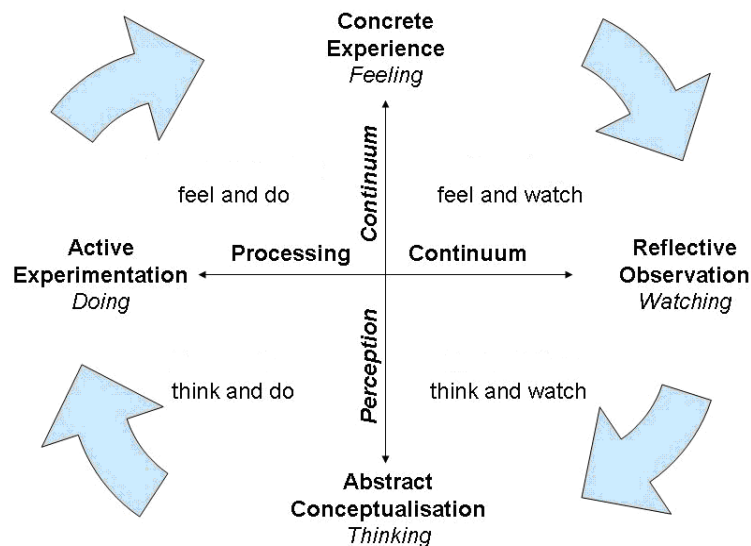
**Fig. 2** *Tuson's model [2]*

When conducting intercultural trainings we try to get the participants from the “comfort zone” to the “learning zone” precisely by involving them into aforementioned outdoor activities. Firstly they might feel uncertain about it, like being in the unknown environment. However with gradual learning and acquiring both theoretical and practical knowledge and skills, their “comfort zone” expands. From the intercultural perspective the “comfort zone” represents you own culture, whereas the “learning zone” is represented by the space for interaction with other cultures and finally the “panic zone” is a source of misunderstandings and social conflicts. The aim of outdoor learning is to simulate specific situations that can help to extend the “comfort zone” range by being active in their “learning zone”.

### **Kolb's learning cycle**

Authors of this paper identify and share Kolb's opinion that learning is the process whereby knowledge is created through the transformation of experiences. They propose to apply six main characteristics of experiential learning to use on the multicultural education. Kolb's learning theory sets out four distinct learning styles, which are based on a four-stage learning cycle. In this respect, Kolb's model differs from others since it offers both a way to understand individual learning styles, and also an explanation of a cycle of experiential learning that applies to all learners. “Experiential” means relating to or resulting from experience while “experimental” means relating to or based on experiment. Kolb uses the term “experiential” as his theory is based more on reflection of experiences. While others use “experimental” when referencing experimental-inquiry a technique that requires learners to test hypothesis about content knowledge. Kolb theorized that the four combinations of perceiving and processing determine one of four learning styles of how people prefer to learn (3).

According authors, it is necessary to explain the importance of increased attention and interest in the area of multicultural learning. The Kolb's theory of understanding we can also apply and use for multicultural learning. It is source learning of development people which work together in workplace and they are from diverse cultures. All mentioned attributes are helpful in building of stable and effective multicultural teams. Steps of multicultural learning process are below (Figure 3). This figure provides a learning cycle that involves four processes that must be present for learning to occur. Depending upon the situation or environment, the learners may enter the learning cycle at any point.



**Fig. 3** Kolb's learning styles [3]

#### Steps in the learning process (4):

- Feeling: Learning from specific experiences. Sensitive to other's feelings.
- Watching: Observing before making a judgment by viewing the environment from different perspectives. Looks for the meaning of things.
- Thinking: Logical analysis of ideas on intellectual understanding of a situation.
- Doing: Ability to get things done by influencing people. Includes risk-taking.

#### Research findings

"Think globally, act locally" has become a slogan for our society. This way of thinking and acting was transferred to almost all areas of life (economical, political and educational) and it is applied in the context of schools, societies and enterprises as well. The ability to understand and accept cultural diversity is becoming essential in the ordinary working environment. Enterprises supporting the knowledge improvement of their own employees have understood that a friendly working environment leads to increased motivation, consequently reflected in their performance. The authors focus on the "outdoor method" as an actual phenomenon, which is used in teaching the topic of tolerance towards cultural diversity. They describe the individual stages of this method and introduce a modified version of Tuson's model as an effective tool for conflict resolution in the workplace. The tools introduced in this paper, place particular emphasis on actions to prevent conflicts in the workplace. The authors base the study on the assumption that extensively developed intercultural relationships lead to mutual understanding between people and consequently to less interpersonal conflicts. Kolbe cycle usually focuses on multicultural education in schools. The authors suggested this cycle to be applied for multicultural teams in industrial enterprises.

#### Authors of this paper state some examples according Kolb's cycle:

##### Learning to coach:

- Concrete experience - Having a coach guide you in coaching someone else.
- Active experimentation - Using your people skills with what you have learned to achieve your own coaching style.
- Reflective observation - Observing how other people coach.
- Abstract conceptualization - Reading articles to find out the pros of different methods.

### Learning algebra:

- Abstract conceptualization - Listening to explanations on what it is.
- Concrete experience - Going step-by-step through an equation.
- Active experimentation - Practicing.
- Reflective observation - Recording your thoughts about algebraic equations in a learning log.

### Conclusion

As the whole world becomes connected and globalised we can see the interactions of different cultures in every part of our lives, not only in professionally, but in personal relationships as well. People have various backgrounds represented in their cultural identity, they have different expectations, ways of thinking and acting, which sometimes can lead to misunderstandings and conflicts, therefore it is of great importance to place an emphasis on understanding and accepting those coming from other cultures. This is the main reasons why is necessary to know and apply multicultural education in industrial enterprises. This paper built upon the theory of knowledge processing and its role as a theoretical basis for knowledge development in the area of multicultural education. The authors explained the importance of increased attention and interest in the area of multicultural education.

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## **A MULTICULTURAL COMPETENCIES APPROACH TO DEVELOPING HUMAN CAPITAL MANAGEMENT**

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### **Abstract**

*The globalisation phenomenon has been prevalent since the last decade of 20th century and remains a significant factor influencing both organisations and individuals today. Within a globalised business environment the effective management of multicultural aspects and differences has become imperative to ensure success. It is increasingly evident there is a need to develop a clear understanding of multicultural competencies in order to fully develop a strategic approach to human capital management (HCM). The adoption of a strategic approach is necessary to ensure a focus on the issues critical to success and competitive advantage including multicultural management, professional skills and knowledge management. This paper aims to identify the importance of intercultural management and the impact of globalisation upon international business.*

### **Key words**

*Human Capital Management, Globalisation, Multiculturalism, Culture, Diversity*

### **Introduction**

The trend towards globalisation over the last decade has resulted in an increased need to focus on developing a clear understanding of organisational culture and the management of multicultural competencies. This need has been accelerated in the context of Slovak enterprises due to the country's recent accession to the EU and an influx of Foreign Direct Investment (FDI). As workplaces in Slovakia have become more diverse, multicultural management competencies have gained increased prominence. In an increasingly competitive global market there is a need to adapt the traditional function of Human Resource Management (HRM) to enable the function to take on a greater strategic role (1). By placing a

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greater emphasis upon Human Capital Management (HCM), whereby employees are regarded as the most valued asset of any organisation (2), HRM can adopt a strategic focus within the organisation. It is essential that Slovak enterprises develop a clear understanding of their internal management culture, in order to measure the value of management competencies. The term organisational culture has been a topic of significant academic debate with numerous authors providing their own definitions. Harrison (3) proposed a model of four different types of organisational culture categorised as “people”, “power”, “role” and “task” orientations. Harrison’s original model was later developed by Schein (4), Handy (5) and Williams et al (6). Schein’s categorisation will be utilised within the study methodology and will be discussed later in the paper. The focus of this paper is to present the findings of a 2011 study of 132 employees within organisations in the Slovak Republic. The paper aims to apply the traditional model of organisational culture to determine the management style preferences and the key management competencies within Slovak enterprises.

### Organisational culture in the Slovak Republic

The rapid globalisation of the Slovak economic system has led to large scale FDI with numerous MNC’s (Multinational companies) including Peugeot-Citroen, Kia and Volkswagen opening subsidiaries in recent years. To harmonise management within both the Slovak subsidiary and the corporate entity it is necessary to understand and appreciate the role of culture at both a national and corporate level. As culture is applied to both nations and organisations a clear distinction between national and corporate culture is necessary. Moreover, cultural stereotypes can also refer to a nation, with each organisation also possessing its own cultural variation (7), thus underlining the necessity to clearly distinguish between national and corporate culture. As the focus of the study is primarily upon organisational culture it is valuable to assess the key author definitions of organisational culture. Schein (4) referred to organisational culture and corporate culture interchangeably and described it as being comprised of “the attitudes, experiences, beliefs and values of an organisation”. Deal and Kennedy (8) described culture as “a system of informal rules that spells out how people are to behave most of the time”. Purcell et al (1) elaborated upon the earlier definitions to refer to organisational culture as “system of shared values and beliefs about what is important and relationships internally and externally”. Organisational culture has been defined by several authors including Harrison (3) and Schein (4) as consisting of four specific types shown in Table 1:

CLASSIFICATION OF DIFFERENT TYPES OF ORGANISATIONAL CULTURE Table 1

Harrison (3)	<ul style="list-style-type: none"> <li>• <i>power-orientated</i> – responsive to personality not expertise;</li> <li>• <i>people-oriented</i> – consensual, management control rejected;</li> <li>• <i>task-orientated</i> – focus on competency, dynamic;</li> <li>• <i>role-orientated</i> – focus on legality and bureaucracy.</li> </ul>
Schein (4)	<ul style="list-style-type: none"> <li>• <i>The power culture</i> is one in which leadership resides upon the individual</li> <li>• <i>The role culture</i> is one where power is balanced.</li> <li>• <i>The achievement culture</i> is one in which personal motivation and commitment is valued.</li> <li>• <i>The support culture</i> is one where people contribute out of a sense of commitment and solidarity.</li> </ul>

Author elaboration (2011)

## Human Capital Management (HCM) and the development of managerial competencies

Several academics have identified a clear relationship between the company's performance and corporate culture. Dawson (9) defines corporate culture as: *'the engine of value creation'*. Moreover, the human capital of an enterprise at the simplest level refers to the people who work for the organisation and who ensure its continued success (10- 12). Whilst the notion of human capital was originally proposed by Beer et al (13), it has become increasingly more popular in recent years, as organisations operating in globally competitive marketplaces and face increase pressure to strategise. Legge (14) supports this philosophy and suggests that the human capital of an organisation is the most valuable source of competitive advantage. Although Human Capital Management (HCM) clearly displays similarities with Human Resource Management, Armstrong (12) attempts to make a clear distinction between the two, referring to HCM as *'An approach to obtaining, analysing and reporting on data which informs the direction of value-adding people management strategic investment and operational decisions at a corporate level and at the level of front line management'*. In contrast Armstrong (12) defines HRM as *'a strategic and coherent approach to the management of an organisation's most valued assets – the people'*. As employees are regarded as the greatest and typically the most expensive asset within an organisation this is of critical importance to maintain competitive advantage, however determining which competencies are of greatest importance is a highly subjective and complex challenge. Kanter and Dretler (15) argued the role of effective communication and developing new routes of communication, whereas, McCall and Hollenbeck (16) and Kuhlmann and Stahl (17) emphasise the importance of tolerance, openness and understanding cultural ambiguity. In a recent study conducted by Cagánová (18) 124 professionals in Slovakia surveyed and a list of 20 key competencies were developed:

MATRIX OF 20 KEY MANAGEMENT COMPETENCIES

Table 2

Communicative competency	Openness towards ways of thinking	Language competency	Social competency	Culture consciousness
Ethics	Ability to manage diversity	Cultural empathy	Tolerance towards ambiguity	Flexibility
Ability to collaborate and lead	Honour, truthfulness and integrity	Managing unpredictable situations	Professional excellence	General management skills
Life-long learning	Resourcefulness	Self-confidence	Critical thinking	Managing stereotypes

Cagánová (18)

## Research methodology

The research study was conducted by means of a structured questionnaire of 132 employees working within industrial enterprises, research institutions and universities in Slovakia. The research was carried out during the summer and autumn of 2011.

The questionnaire was designed to measure responses relating to the importance of key managerial competencies identified by Cagánová (18). Secondly respondents were asked a series of statements and their preferred management style categorised to reflect one of the four organisational culture types identified by Schein (4). The four organisational culture types were categorised to refer to comparable management types shown below:

<b>Schein's (4) Culture types</b>	<b>Comparable Management style</b>
Power culture	Distant
Role culture	Commander
Achievement culture	Active
Support culture	Friend

Author elaboration (2012)

Within the sample a significant proportion of respondents were employed in the public sector with 38 employed (30.65 per cent) by universities. There was a large mix of respondents and there was a wide spread although the largest number of respondents reported they were at the bottom in terms of job position while 16 respondents (12.90 per cent) reported they were in top management.

### **The implications of developing management competencies in Slovak enterprises**

Following the research it is possible to determine those management competencies which are as most important for the management in Slovak enterprises. Table 3 and Figure 1 show that communication and language are regarded as the most important traits for the effective management. Communication competency is the most important competency overall with an average score of 4.54, followed by the language competency with a score of 4.3. It can be concluded that managers in Slovak enterprises place greatest importance upon foreign language skills. This trend can be explained firstly by the necessity to speak foreign languages in order to trade outside of the Slovak Republic and secondly by the rapid growth of multinational organisations, increasing the need for foreign language. Due to the relative infancy of these enterprises and Slovakia's recent ascension to the EU and Eurozone, it is evident that organisations will continue to place emphasis upon language skills.

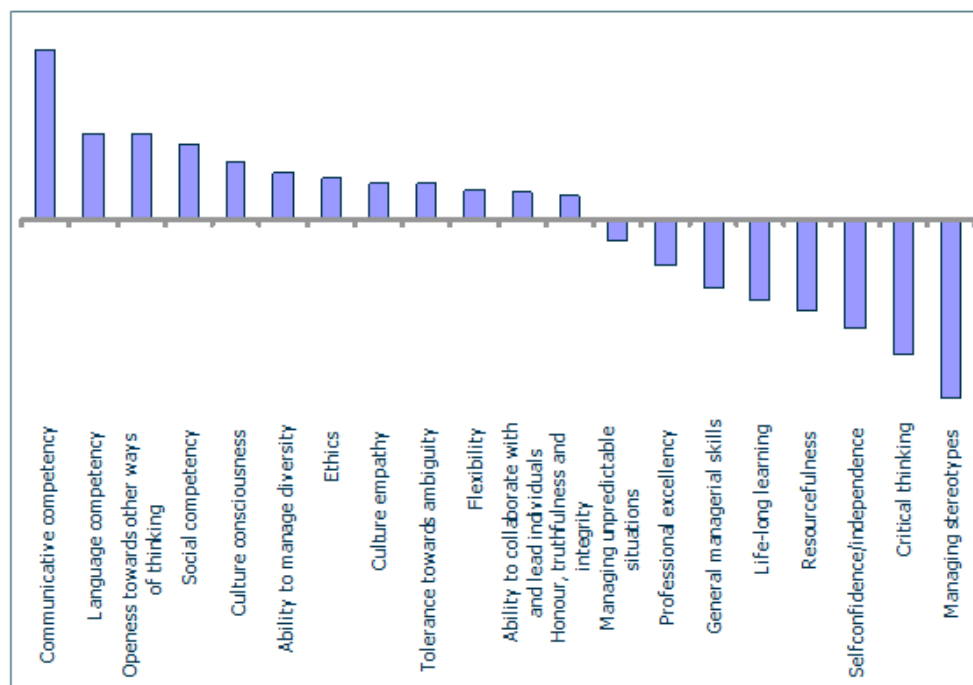
#### **THE AVERAGE IMPORTANCE RATING OF MANAGEMENT COMPETENCIES WITHIN SLOVAK ENTERPRISES**

Table 3

<b>Competency area</b>	<b>Weighted arithmetic average</b>	<b>Standard Deviation</b>
Social competency	4.25	0.736436
Communicative competency	4.540323	0.573602
Tolerance towards ambiguity	4.145161	0.820047
Critical thinking	3.637097	0.81651
Culture empathy	4.169355	0.78001
Professional excellency	3.91129	1.047363
Language competency	4.306452	0.774362
Flexibility	4.129032	0.792787
Ability to collaborate with and lead individuals	4.112903	0.785038
Ability to manage diversity	4.177419	0.730095
Self-confidence/independence	3.717742	0.903046
General managerial skills	3.862903	0.864485
Openness towards other ways of thinking	4.314516	0.765874
Resourcefulness	3.790323	0.825737
Life-long learning	3.798387	0.999837
Culture consciousness (sensitivity. adaptability)	4.233871	0.708347

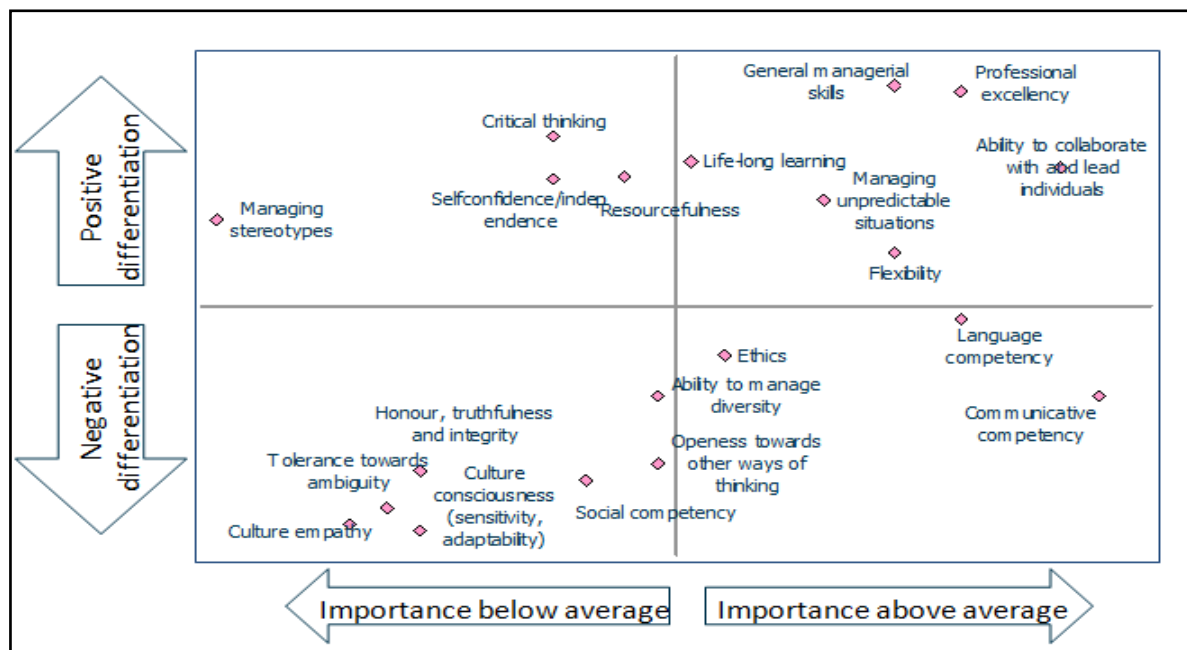
Ethics	4.193548	0.789829
Honour, truthfulness and integrity	4.104839	0.850223
Managing stereotypes	3.491935	0.954581
Managing unpredictable situations	3.951613	0.914532

At the opposing end of the competency scale, if those rated as least important are analysed it is evident that managing stereotypes and critical thinking are regarded as least important. Managing stereotypes received an average rating of 3.49 and critical thinking with a rating of 3.63. The disparity of importance between communicative and diversity related competencies can be explained by the fact that language and communication difficulties represent the greatest challenges on a day-to-day basis for Slovak organisations due to the growth of international business and overseas trading partners. In contrast the development of multicultural policies and practices such as diversity awareness and the critical appraisal of employees are more recent phenomenon for Slovak enterprises and are less integrated into day-to-day roles of management.



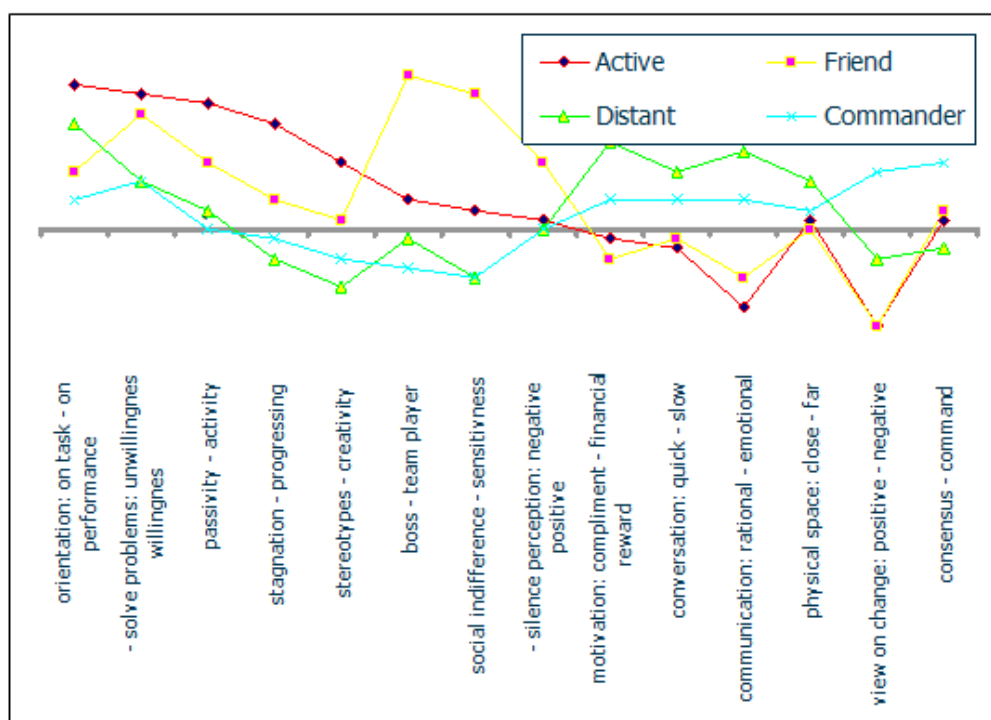
**Fig. 1** Overall importance of management competencies

In addition to the analysis of the most important management competencies, the data was also plotted within a matrix to analyse the competencies based on the levels of importance and differentiation. From the findings depicted in Figure 2 it is evident that the managers who rate “professional excellency” as the most importance/positively differentiated factor, also place high importance upon similar management skills and attributes including “collaboration”, “general management skills”, “flexibility” and “life-long learning”. In contrast very little importance was placed on diversity related competencies such as “managing stereotypes”, “cultural empathy”, “tolerance towards ambiguity” and “cultural consciousness”. This indicates that the managers who regard themselves as valuing “professional excellence” prefer to focus on utilising and developing their general all-round management skills rather than cultural specific competencies.



**Fig. 2** Management competencies scores for managers who rate “professional excellency” as the most important competency

The research findings have a valuable practical application for the process of assessing management competencies in the context of HCM. At an individual level a management competency audit should be conducted to determine those competencies which are regarded as the most important for business success and exhibited by the highest achieving managers. The competencies can then be measured and tracked to determine the individual performance of managers and as a means of identifying areas of competency development. It will subsequently be possible to track these competencies over a period of time and measure the human capital value of employees within the enterprise. The expectations were measured based upon the style of the individual manager. Respondents were asked a series of questions which classified their manager as one of the four management styles of “active”, “distant”, “friendly” and “commander”. These management styles correspond directly with the characteristics of organisational culture types depicted by Schein (4) as “achievement”, “power”, “role” and “support” cultures. It is evident from the findings shown in Figure 3 that the expectations of managers vary widely based upon their preferred managerial style. The managers categorised as “friendly” appear to place greatest emphasis upon being a team player and exhibiting social and cultural sensitiveness. In contrast those managers classified as “distant” possess expectations such as rational communication and a slowness to share information. It is also valuable to note that the “friend” and “active” management styles partially follow the same trends, whereas “distant” and “commander” exhibit closer characteristics, therefore indicating greater synergy between those managers who possess “active” and “friendly” management styles and “distant” and “commander” styles.



**Fig. 3** Manager's expectations of their immediate subordinates by "management type"

### Conclusions and implications

In conclusion, it is evident that the Slovak economic landscape is rapidly evolving and there is a need to develop a continuous feedback approach to the development of management competencies as competency will change and adapt alongside management priorities. The survey findings conclude that language and communication will remain of greatest importance to managers in the Slovak Republic, however low priority competencies such as diversity training are likely to reach equal importance as the economy develops further. It is evident that in order to succeed within a highly competitive global marketplace it is necessary for Slovak enterprises to develop a clear set of management competencies as proposed by Cagánová (18). Moreover in order to ensure HRM adopts a strategic focus it is essential that the management competencies are measured using relevant metrics to assess the human capital value of these competencies. In particular it is interesting to observe the significant differences in approach of those managers who regard "professional excellency" as most important compared to those who consider "cultural empathy" as most important. In the context of HCM the findings indicate that a clear strategy is required to enable the identification, development and continuous measurement of management competencies.

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**RESPECTING STAKEHOLDERS AND THEIR ENGAGEMENT  
TO DECISION MAKING – THE WAY OF SUCCESSFUL CORPORATE  
SOCIAL RESPONSIBILITY STRATEGY**

Katarína DRIENIKOVÁ, Peter SAKÁL<sup>1</sup>

**Abstract**

*Current world situation characterized by constant dynamic development and changes in all spheres enforced us to view the business not only as a profit creator but as creator of added value to the society. The paper deals with the stakeholders as the integral part of corporate social responsibility (CSR) concept. It mentions the topic of stakeholder theory and stakeholder management in consideration of sustainable development and sustainable competitiveness of business. Within the paper are mentioned outputs of pilot research carried on among Slovak companies focusing on stakeholders and decision making within responsible business.*

**Key words**

*CSR, sustainable development, stakeholder engagement, stakeholder management, decision making*

**Introduction**

A company should be understood as an institution, which the main task is to produce profit while being a part of the environment, which the company should bring benefits.

Companies besides financial and legal commitments have also responsibilities towards their employees, consumers, suppliers, local community and other stakeholders. The term “corporate social responsibility” (CSR) has just become the synonymous of business in which companies realize their commitments and seek their implementation. CSR should be an example of responsible business towards society for companies that still haven’t realize their commitments towards society, resp. they didn’t want to take them into account.

Only through the promotion and application of the principles of responsible business it’s possible to contribute to enhance the life conditions on our planet and to support its sustainability. It is necessary to still emphasize the need to transfer the principles of CSR into

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all business activities, to communicate about their impacts and constantly engage stakeholders in their further development.

To reach the win-win or successful CSR strategy in a company all the stakeholders must be included into the responsible business. Every element of the relationship (company-stakeholder) must be satisfied. The satisfaction on the both sides can be created only just company knowing, respecting and managing stakeholders needs, interests and opinions. The very essential part of the successful relationship is also stakeholder engagement to all business activities, especially to decision making processes that affects the later behaviour of company towards stakeholders.

The paper is to highlight the need of knowing not only business stakeholders but also their needs, interests and demands to manage relationship with them and to engage them into decision making. The paper also shows off the brief view on the results of the pilot CSR survey carried out in Slovak industrial companies.

### **Stakeholders within the CSR strategy**

#### **Corporate Social Responsibility**

The continued dynamic growth and change in all areas of business have resulted in not only inconsistency in the terminology of corporate social responsibility (CSR) but also in ambivalence in the number of programs and models, which covers the topic of CSR (1).

In any case, if we look at the topic of the CSR concept from any viewing angle, it is clear to us that CSR philosophy is built on three pillars (economic, social and environmental). It is universal, built on the basis of cooperation with stakeholders, emphasizes the development not only the growth, aims to contribute to the quality of life and is voluntary too.

The principle of voluntary CSR was in 2010 (in Slovakia in 2011) supported by the issuance of ISO 26000 ("Guidance on social responsibility"), which is a voluntary tool for dealing with the key areas of CSR as well as a way of integration socially responsible behaviour into business. The principle of voluntary means that companies that want to truly act responsibly towards society, they do it. They are not driven to do something by force, because just by incorporating the concept of CSR into business based on command causes the company forgets the true essence of doing responsible business and acts "automatically" not realizing what it means. However, socially responsible approach to business is just about companies realization that they are not alone in their businesses, but are the one part of the environment, which affects the business and is affected by business actions.

The CSR philosophy must be included in decision making processes through all company too. By realizing impacts of the business decision on people, planet and profit before making it that's the right start to behave in responsible way.

World Business Council for Sustainable Development in 2004 noted: ***"Business is not divorced from the rest of society. How companies behave affects many people, not just shareholders. A company should be a responsible member of the society in which it operates"*** (2).

Just the statement above should become a basis of any business, because only by realization and acceptance of responsibility for business activities, the company can become sustainably competitive.

The definition of CSR (European Commission, Green Paper 2001), (3): ***“CSR is a concept whereby companies integrate social and environmental concerns in their business operations and in their interaction with their stakeholders on a voluntary basis”***, refers to the stakeholders as the necessary part one of the CSR issue.

## **Stakeholders**

An open dialogue with all stakeholders is the basis and the expression of corporate social responsibility too. In general we can imagine stakeholders as all those (from individuals through groups of individuals to the organizations) who have some impact on business activities, respectively are in some direct or indirect ways influenced by business activities.

Companies should behave in responsible way, respectively to implement a responsible approach towards their stakeholders precisely because they are just reliable business partners and their satisfaction is a great benefit for business.

At present, in companies, which business is based on the CSR philosophy, there is an ongoing debate about the impact of economic activities on stakeholders, preceded by the ethics review and social climate in the company (1).

## **Stakeholder Theory**

In the context of the CSR we cannot fail to mention the stakeholder theory, which relies on the condition to non-handicap one stakeholder group (shareholders, business owners) at the expense of other stakeholder groups. Its essence is a non-subordination the interests of other stakeholders to one group of stakeholders, other stakeholders cannot serve as a tool to achieve shareholders objectives (1).

There were many critics of the theory, such as American economist Milton Friedman, representative of Chicago national school, who claimed that the only one criterion of responsibility is to maximize the profits. He argued that maximizing social profit is the role of the government by setting rules that companies should strictly follow.

However, we cannot look at the company only as at a tool that serves the owner to increase his own wealth. The company must be understood as an open group of stakeholders whose interests, needs and surely their own power affect the business. Therefore the company's aim should be to know, respect and manage their interests, needs and opinions.

One of the most classic stakeholders definitions is probably the definition of the American philosopher, professor and also the father of the current stakeholder theory, Edward Freeman, who says that stakeholders are ***“those who can affect or is affected by the achievements of the organization's objectives”***, 1984, (4).

Stakeholders are usually considered as a group of people with a recognizable relationship with the company including: shareholders, customers, suppliers and distributors, employees, local communities.

Still there are discussions about the issue whether the stakeholders are considered by the company only as those who are distinguished in achieving corporate goals or as anyone who is influenced by the business in some way. We prefer the opinion that stakeholders are considered all those that have any direct or indirect influence on company, because the effect can be changed over time.

So in addition to the above mentioned stakeholders they may be characterized also as following stakeholder groups (4): competition, media, public, lenders, unions, NGOs, government, other business partners and others (figure 1).



**Fig. 1 Business stakeholders**

There are many ways for stakeholder's classification, in terms of CSR they can be classified according to the table (Table 1), (5).

STAKEHOLDERS ACCORDING TO CSR FIELDS

Table 1

CSR field	Stakeholders
Market	<i>shareholders, investors, customers, business partners, suppliers, competition, government and its institutions</i>
Working environment	<i>employees and their families, trade unions</i>
Local community	<i>public, non-profit organizations, media, education institutions</i>
Environment	<i>non-profit organizations, government and its institutions, public</i>

The stakeholder theory can be characterized as an attempt to explain the business operation in the modern world. Companies are subjects to the demand of various stakeholders. Their values and ways of decision making are undermined by mutual and often contradictory action of individual actors.

Stakeholder theory states that all stakeholders must be considered in decision making process of the company. **The theory states that there are 3 reasons why this should happen (6):**

- ***It is the morally and ethically correct way to behave.***
- ***Doing so actually also brings benefits for shareholders.***
- ***It reflects what actually happens in a company.***

### Stakeholder Management

Currently, not only in companies that are involved in CSR activities outweighs the increased interest in management of their own stakeholders, but especially in managing relationships with them. A medley of different tools, models, methodologies, or procedures

that main function is to manage the relationship between business and its stakeholders, is called stakeholder management (7).

Mutual relations between the company and its stakeholders may occur in either a positive or negative way. In any case, it is clear that companies need to manage relationships with their stakeholders so as to minimize their negative impacts and to be ensured that they won't be the brakes in achieving the objectives of individuals and company.

Stakeholder management dictates that the company should be in contact with a variety of significant groups; company should encourage and maintain support of these groups, noting and balancing their relevant interests.

Like the very concept of CSR also stakeholder management is based on a voluntary basis. Experience has confirmed that *stakeholder management serves as a voluntary key tool in achieving economic success of business efficiency and sustainable development over the long-time interval.*

Within the context of corporate social responsibility issue, the stakeholder management can be understood as the **two basic areas**:

- *the stakeholders identifying (identification and analysis of the impact of their interests and forces) associated with their classification and identification of key stakeholders,*
- *the process of engaging stakeholders (stakeholder engagement).*

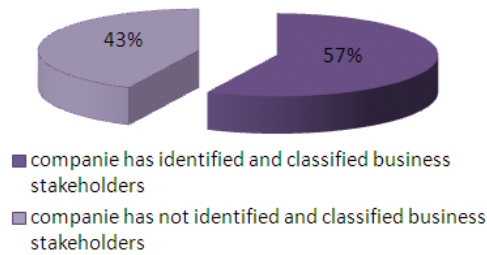
An integral part of stakeholder involvement in CSR activities is also the dialogue with stakeholders. Stakeholder dialogue is the essence of co-creation of shared understanding between business and individual stakeholders.

### **The pilot survey**

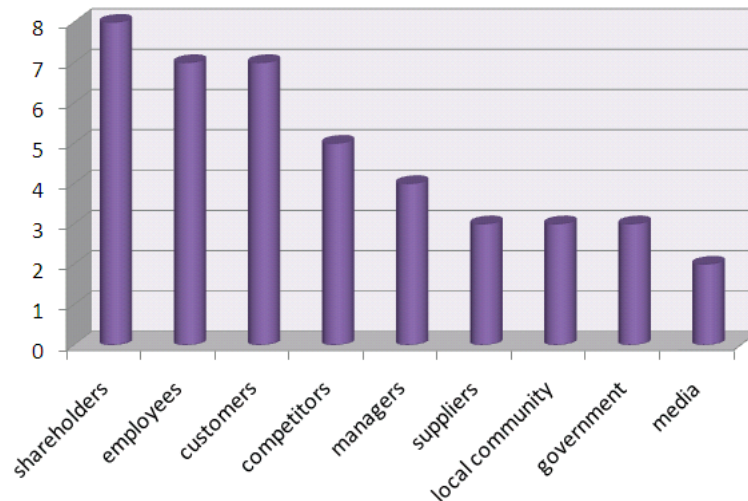
In the beginning of the 2012 (January), we conducted a survey in Slovak companies on the issue of corporate social responsibility and stakeholders within the context of CSR. Pilot survey was attended by 14 from 65 addressed companies (more than 21% return), whereas it was about 3 micro-enterprises, 7 SMEs and 4 large companies, mainly manufacturing companies with limited liability.

The evaluation of the questionnaires showed that in almost 65 % of companies the CSR issue is discussed and nearly 90 % of asked companies reported that they did not solve only their own business interests, but also were interested in the welfare of the environment. Companies that have a strategy based on the principles of CSR or SD (more than 80 %) indicated that it's because of enhancing their image, improving their relationships with employees and the local community and because of the effort to sustainable development. It was interesting to find out that half of the respondents stated that the concept of CSR didn't see as a competitive advantage.

More than half of the respondents (57 %) stated that they identified and classified the business stakeholders, mostly owners, employees, customers, competitors and managers (see figure 2, figure 3).



**Fig. 2 Business stakeholder identification**

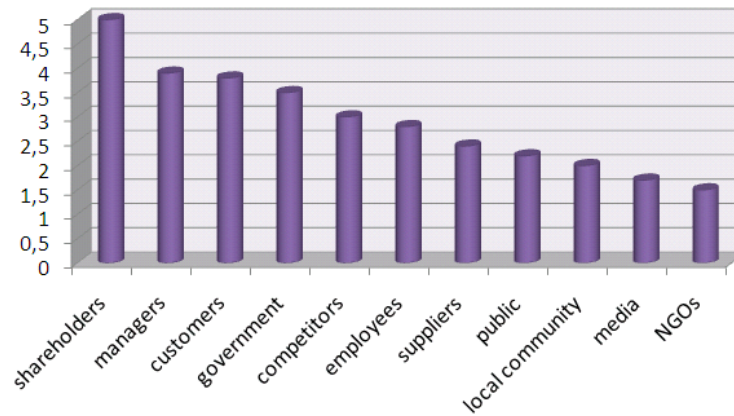


**Fig. 3 Business stakeholders**

Only five companies have also identified and defined the objectives of their stakeholders, that means that only more than 60% of businesses that identify stakeholders are also interested in stakeholders' goals and expectations.

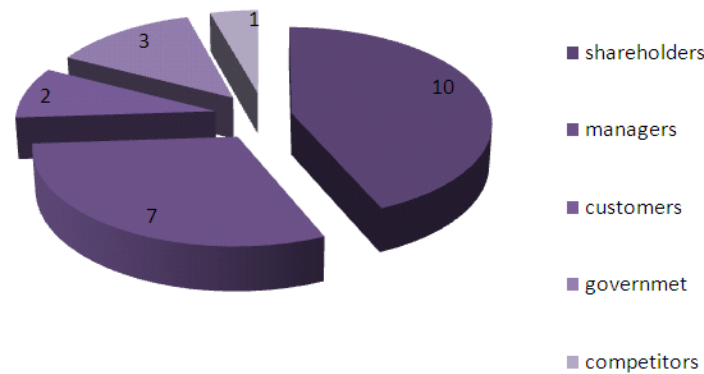
The process ensuring stakeholder dialogue, consultations and feedback from business stakeholders have only 5 respondents, representing 36% of the 14 asked. Only two respondents (17%) claimed the company used a set of goals, actions and indicators to close contact with their stakeholders. Satisfaction surveys, resp. studies of business stakeholders, regularly elaborates one third of respondents.

Only 36% of respondents stated that the importance of the interests and expectations of different stakeholders was not the same, with the greatest importance in relation to company activities the respondents assigned owners, managers, customers, state/government institutions, and competition (figure 4).



**Fig. 4** Business stakeholders' importance

Companies involve to decision-making processes only the owners and managers, in addition 3 companies claimed that to the decision involved state/government, customers (2 respondents) and one company also its competitors (figure 5).



**Fig. 5** Stakeholders engagement to company decision making

At the end of the pilot survey, we wanted to know if the companies think stakeholders would welcome the opportunity to involve stakeholders' representatives in company decision making, this view was upheld by only 10 companies, that was just over 70% of respondents.

## Conclusions

The concept of corporate social responsibility can be understood as a business concept, which emphasizes the great potential in achieving sustainable development. Corporate social responsibility, however, should not remain merely a tactical and a marginal business concern largely controlled by marketing and public relations, but it must be a part of an overall corporate strategy, respectively it must be its core. The concept of sustainable CSR can be understood as a philosophy, approach the company that wants its stakeholders to behave in a sustainable manner.

The paper emphasizes the need of businesses to focus on all of its stakeholders, not only to its shareholders, customers and employees, but to all those who are in some way in contact

with the company. To know, respect and manage most of the stakeholders needs, interests and to engage or involve at least the key stakeholders to company decision-making process.

The article also refers to the outputs of the pilot survey declaring that although many companies have already been aware of their responsibility for the state of the environment and try to apply the philosophy of sustainable development and corporate social responsibility, still most of them are unaware of that the stakeholders are not only shareholders, employees and customers, but they must regard all stakeholders who are in some way in contact with the company. Just as well companies cannot forget that it is not enough just to identify and classify their stakeholders, but it is necessary to be in constant interaction with them - to identify their expectations and demands on the company and involve them in decision making processes.

### Acknowledgements

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*The paper is also a part of my dissertation thesis with the topic: "Proposal for using of AHP in CSR strategy of industrial companies".*

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8. [http://publview.stuba.sk/view\\_publ.php?dv=1&kd=-2&roh=-1&a=80764&chb\\_pdr=-1&nz\\_typ=4](http://publview.stuba.sk/view_publ.php?dv=1&kd=-2&roh=-1&a=80764&chb_pdr=-1&nz_typ=4)

9. [http://publview.stuba.sk/view\\_publ.php?dv=1&kd=-2&roh=-1&a=29765&chb\\_pdr=-1&nz\\_typ=4](http://publview.stuba.sk/view_publ.php?dv=1&kd=-2&roh=-1&a=29765&chb_pdr=-1&nz_typ=4)

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**SUSTAINABLE CORPORATE SOCIAL RESPONSIBILITY - AN  
ALTERNATIVE FOR A PARADIGM CHANGE OF BUSINESS  
IN THE 21ST CENTURY**

Gabriela HRDINOVÁ, Peter SAKÁL<sup>1</sup>

**Abstract**

*The critical system analysis of the current status of all areas of human activity on the planet Earth (in Europe and the Slovak Republic) convinces us, that this development is unsustainable. Many prominent personalities of scientific, cultural, social and political life stated that our planet Earth and mankind with it, and all that man has created during its existence is only one step finds itself on the brink of disaster and it will turn against man. Many theoretical concepts, based on the historical development and experience notes that this status is natural and inevitable. However, we hold a different opinion. If the man is team, that is declared, it must show (now at the turning point) themselves and future generations, that it thinks with its existence on planet Earth seriously and responsibly. Given by the current global crisis and also our belief that the fundamental problem of humanity is unfair creation and distribution of wealth on planet Earth, we maintain opinion for changing the paradigm of thinking in this area. As the only alternative for solving this problem we see in the application of the concept of sustainable corporate social responsibility. The article presents our idea.*

**Key words**

*Sustainable development, sustainable corporate social responsibility*

**Introduction**

At the time of writing this article everyone survives amount of personal existential problems but also successes. Every day we come into contact with a lot of different information, companies, organizations, institutions and at school or in employment we spend most of our life.

We feel firsthand effects of these, man-made, organizational structures on ourselves and society. Impacts of behavior of these entities directly or indirectly affect the entire world and

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it is up to us to reflect on the prospect of future generations, and hence own children. Many things we can affect directly or resolve. It depends only on our courage, attitude and erudition. Some are called "force majeure", as if the higher power not influenced by us. However, as the history of mankind show, from the creation of man on planet Earth, humanity itself is the architect of own destiny in the good and in the bad. Nothing is accidentally constructed; everything is managed by someone for a certain clearly defined goal. However, mostly man and all humanity have not learned from own mistakes, as if without the "memory", "unconsciously" he repeats these mistakes at own peril and leaving own fate and the fate of planet Earth in the hands of like "the invisible hand of the market". Dominance over him gaining a small group of "chosen" who buy through corrupt politicians in "democratic societies" their obedience and seek to manipulate, deceive and influence public opinion. With current information technology and the Internet also spread the "secret documents and reports" that were to be forever hidden from the "ordinary people" and it is only up to us how we use them for the benefit of humanity and the preservation and maintenance of life on planet Earth.

**The concept of sustainable development** - CSD did not allow and do not allow sleeping its predictors - <http://pravdu.ru/lessons/petrov/>, as well as world rulers and opponents, trying to sophisticated egotistical and arrogant way usurp the planet Earth (facing at present also for the earth boundaries, for example. flights on Mars [http://www.google.sk/#hl=sk&scient=psy-ab&q=mars+a+lety+na+mars&oq=mars+a+lety+na+mars&gs\\_l=hp.3...10279.14909.1.15322.15.15.0.0.0.102.1155.14j1.15.0...0.0...1c.H7tqL5wdjXE&pbx=1&bav=on.2,or.r\\_gc.r\\_pw.r\\_qf.&fp=c4131d045dd8a889&biw=1920&bih=1083](http://www.google.sk/#hl=sk&scient=psy-ab&q=mars+a+lety+na+mars&oq=mars+a+lety+na+mars&gs_l=hp.3...10279.14909.1.15322.15.15.0.0.0.102.1155.14j1.15.0...0.0...1c.H7tqL5wdjXE&pbx=1&bav=on.2,or.r_gc.r_pw.r_qf.&fp=c4131d045dd8a889&biw=1920&bih=1083)) only for their predatory goals and make the most of the modern population modern slaves:

- [http://druidova.mysteria.cz/JAK\\_JDE\\_ZIVOT/TICHE\\_ZBRANE.htm](http://druidova.mysteria.cz/JAK_JDE_ZIVOT/TICHE_ZBRANE.htm);
- [http://www.google.sk/#hl=sk&gs\\_nf=1&cp=9&gs\\_id=15&xhr=t&q=Protokoly+sionsk%C3%BDch+mudrcov&pf=p&scient=psy-ab&oq=Protokoly&gs\\_l=&pbx=1&bav=on.2,or.r\\_gc.r\\_pw.r\\_qf.&fp=98eb4b6d14a7e14e&biw=1920&bih=1083](http://www.google.sk/#hl=sk&gs_nf=1&cp=9&gs_id=15&xhr=t&q=Protokoly+sionsk%C3%BDch+mudrcov&pf=p&scient=psy-ab&oq=Protokoly&gs_l=&pbx=1&bav=on.2,or.r_gc.r_pw.r_qf.&fp=98eb4b6d14a7e14e&biw=1920&bih=1083);
- <http://abbartos.wordpress.com/2011/04/08/novy-svetovy-rad-a-jeho-cesti-protagoniste-iv-rimsky-klub-po-cesku/>;
- <http://www.relay-of-life.org/cz/chapter.html>.

We agree with [1], in which Ivan Klinec made a comprehensive historical and logical analysis of alternative economic and social theories supporting the move towards sustainable development-

([http://www.kniznica.hnutie.org/kniznica/knihy/ekologia/environmentalistika/ivan\\_klinec.pdf?lang=sk](http://www.kniznica.hnutie.org/kniznica/knihy/ekologia/environmentalistika/ivan_klinec.pdf?lang=sk)), that: *"The concept of sustainable development is an alternative concept of development of the society, which should allow further current and also future development of the individual, society and civilization without compromising the present and future existence of man on the Earth."*

We add **ONLY ALTERNATIVE!**

### **Basic assumptions and background of our vision of the concept of sustainable corporate social responsibility**

**Corporate Social Responsibility** - CSR has brought a new perspective on the societal role of an enterprise , organization as well as state, recognition of the link between profitability, ethical and environmental standard of entrepreneurship, awareness of the responsibility for the consequences of own decisions and actions on overall quality of life.

These entities are focusing increasingly on environmental protection development of local community, ethical entrepreneurship and improving relations with employees and partners. CSR can be considered a source of competitive advantage and innovation to help the company remain on the market.

CSR is not an entirely new concept, but the more attention it receives in the second half of the 20th century, especially in the USA.

The visibility of CSR was managed primarily by the European Commission, which has begun to address this issue since the 90s last century, and sees in it an instrument for the achievement of sustainable development (SD). Even currently there resonate many questions over the actual definition of the CSR set at: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2011:0681:FIN:SK:PDF>.

According to the document [2], the European Commission on 25 October 2011 has decided, under Article 304 Treaty on the Functioning of the European Union to consult with European Economic and Social Committee, "A renewed EU strategy for CSR for the period 2011 to 2014."

The main purpose of this document are recommendations aimed at promoting sustainable development of organizations and enhancing trust within entrepreneurship by taking into account the principles of "fair" behavior.

In the notice on the renewed EU strategy for CSR were listed by - <http://www.perspektivykvality.cz/k-hlavnimu-tematu/zzz.html> particular, the following objectives:

- creation of pan-European platform for CSR,
- gain public trust (for example: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2012:181:0014:0020:SK:PDF>,
- CSR national enforcement in the member states (CSR status in the Slovak Republic, for example:  [<http://www.portalvs.sk/sk/prehľad-projektov/6838>\),](https://docs.google.com/viewer?a=v&q=cache:V7qLs8HsVpcJ:www.employment.gov.sk/sprava-o-vytvarani-pomienok-pre-szp-na-slovensku.pdf+%C3%9A%20spe%C5%A1nos%C5%A5+Slovenska+vo+vytv%C3%A1ran%C3%AD+podmienok+SZP&hl=sk&gl=sk&pid=bl&srcid=ADGEESjtE99YBSXuIeCWJHUFwl4kAv0YRtBM1vvK8UkMo_DSCyvyHdjyA9tia04FL4bntOIVQQ-ag8aOeI1OBKZcR-fHeYx6S-tGXSFpuemZTowfbFZxBiebQPdgEDZj85JICahFq3HA&sig=AHIEtbQeaC7UvkUuMXhbi5uS8moG7B_AoA),</a></li>
<li>- mainstreaming of CSR aspects into investment criteria and public procurement,</li>
<li>- actions against unfair trade practices,</li>
<li>- supporting of education and educational projects (our contribution to the education project, for example: <a href=)
- compliance with international principles and standards.

European Economic and Social Committee at its 481st plenary meeting on 23 and 24 May 2012 adopted the following opinion –

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2012:229:0077:0084:SK:PDF>, which is focused by us, in terms of the actual reactions of the world and also the European community for ongoing global crisis, on insignificant and irrelevant issues. Evidenced by the work of Brussels 54 000 officials whose role is based in the past – for example.: <http://www.relay-of-life.org/cz/chapter.html>.

Therefore, based on:

- *a holistic (systemic) approach to the planet Earth as an integral system;*
- *from knowledge that the objective reality which surrounds us has own evolutionary development, in which man negatively affected by own long-term actions;*
- *from the conviction that the only alternative of mankind is a symbiosis of the being in harmony with nature and its regularities of development and sustainable development in all its necessary post-industrial manifestations, (sustainable production, sustainable consumption, sustainable workforce, sustainable marketing, sustainable profit, sustainable quality of life, ...) and so real, productive economy, not virtual, fictitious, unproductive economy;*
- *mainly on the work and ideas of A. Blažej, F. Capra, T.M.Cook, F.Gregor, H. Hendersonová, K.Hatlar, J.Hyršlová, L.A.Ismagilová, J.Keller, M.J.Kiernana, I. Klinec, D.C.Korten, V.K.Lozenko, V. Marková, P. Staněk, W.E.Stead a J.G.Stead, D.Zadražilová, J.Zelený, and all others listed on 2 Multimedia DVDs - [http://www.scss.sk/index.php?categoryid=1&p2\\_articleid=14](http://www.scss.sk/index.php?categoryid=1&p2_articleid=14) - outcomes from the project supported by the Agency for Research and Development under contract no. LPP-0384-09: "Concept HCS model 3E vs. concept of Corporate Social Responsibility (CSR) ";*
- *from own scientific research, pedagogical and publication activities:*
  - [http://www.scss.sk/index.php?categoryid=14&p16\\_sectionid=71](http://www.scss.sk/index.php?categoryid=14&p16_sectionid=71);
  - [http://publview.stuba.sk/view\\_publ.php?dv=1&kd=-2&a=69744&x=9](http://publview.stuba.sk/view_publ.php?dv=1&kd=-2&a=69744&x=9);
  - [http://www.scss.sk/index.php?categoryid=14&p16\\_sectionid=25](http://www.scss.sk/index.php?categoryid=14&p16_sectionid=25);
  - [http://publview.stuba.sk/view\\_publ.php?dv=1&kd=-2&a=29765&x=9](http://publview.stuba.sk/view_publ.php?dv=1&kd=-2&a=29765&x=9);
  - [http://videosever.cnl.tuke.sk/inlook\\_udrzatelne\\_spolocensky\\_zodpovedne\\_podnika\\_nie\\_integralna\\_sucast\\_strategie\\_udrzatelneho\\_rozvoja](http://videosever.cnl.tuke.sk/inlook_udrzatelne_spolocensky_zodpovedne_podnika_nie_integralna_sucast_strategie_udrzatelneho_rozvoja);
  - [http://www.scss.sk/dvd\\_lpp\\_0384\\_09\\_2010/V%DDSTUPY%20Z%20VLASTNEJ%20VEDECKO-V%DDSKUMNEJ%20A%20PEDAGOGICKEJ%20%C8INNOSTI/Projekty%20DDP/HRDINOV%C1%20GABRIELA/HRDINOV%C1%20GABRIELA\\_PROJEKT\\_DD\\_PV18.pdf](http://www.scss.sk/dvd_lpp_0384_09_2010/V%DDSTUPY%20Z%20VLASTNEJ%20VEDECKO-V%DDSKUMNEJ%20A%20PEDAGOGICKEJ%20%C8INNOSTI/Projekty%20DDP/HRDINOV%C1%20GABRIELA/HRDINOV%C1%20GABRIELA_PROJEKT_DD_PV18.pdf)

We also want in the submitted article connect to these authors and their views on the current problems (www.scss.sk) contribute to the paradigm shift of thinking in the 21st century towards the sustainability of life on the planet Earth, as it did for example a 12-year-old girl Severn Suzuki at a conference on the environment in Rio de Janeiro in 1992 - ([http://www.mojevideo.sk/video/1453a/dievca\\_ktore\\_umlcalo\\_svet\\_na\\_sest\\_minut.html?lang=sk](http://www.mojevideo.sk/video/1453a/dievca_ktore_umlcalo_svet_na_sest_minut.html?lang=sk)), respectively to call of Russian scientists of noosphere direction to the global community about the unsustainability of the current state on the planet Earth - <http://pandoraopen.ru/2010-10-16/obrashhenie-uchyonix-noosfernogo-kryla-k-mirovomu-soobshhestvu/>.

## **Critical systemic analysis of current impact of globalization on the planet Earth and humanity**

Using mentioned holistic approach to the critical systemic analysis of the current state of impacts of globalization on our planet Earth and also on human race, selectively we present to the public documents and information which objective and truthful reporting ability is questionable:

### **1. Icelandic quiet revolution:**

- [http://www.youtube.com/results?search\\_query=Islandsk%C3%A1+pokojn%C3%A1+revoluce+-+vzor+pro+v%C5%A1echny+svobodn%C3%A9+lidi+sv%C4%9Bta+&oq=Islands k%C3%A1+pokojn%C3%A1+revoluce+-+vzor+pro+v%C5%A1echny+svobodn%C3%A9+lidi+sv%C4%9Bta+&gs\\_l=youtu be.12...10616.10616.0.11676.1.1.0.0.0.90.90.1.1.0...0.0.FaEuK7YhYbs;](http://www.youtube.com/results?search_query=Islandsk%C3%A1+pokojn%C3%A1+revoluce+-+vzor+pro+v%C5%A1echny+svobodn%C3%A9+lidi+sv%C4%9Bta+&oq=Islands k%C3%A1+pokojn%C3%A1+revoluce+-+vzor+pro+v%C5%A1echny+svobodn%C3%A9+lidi+sv%C4%9Bta+&gs_l=youtu be.12...10616.10616.0.11676.1.1.0.0.0.90.90.1.1.0...0.0.FaEuK7YhYbs;)

### **2. Production of toys in China:**

- [http://www.youtube.com/results?search\\_query=Islandsk%C3%A1+pokojn%C3%A1+revoluce+-+vzor+pro+v%C5%A1echny+svobodn%C3%A9+lidi+sv%C4%9Bta+&oq=Islands k%C3%A1+pokojn%C3%A1+revoluce+-+vzor+pro+v%C5%A1echny+svobodn%C3%A9+lidi+sv%C4%9Bta+&gs\\_l=youtu be.12...10616.10616.0.11676.1.1.0.0.0.90.90.1.1.0...0.0.FaEuK7YhYbs;](http://www.youtube.com/results?search_query=Islandsk%C3%A1+pokojn%C3%A1+revoluce+-+vzor+pro+v%C5%A1echny+svobodn%C3%A9+lidi+sv%C4%9Bta+&oq=Islands k%C3%A1+pokojn%C3%A1+revoluce+-+vzor+pro+v%C5%A1echny+svobodn%C3%A9+lidi+sv%C4%9Bta+&gs_l=youtu be.12...10616.10616.0.11676.1.1.0.0.0.90.90.1.1.0...0.0.FaEuK7YhYbs;)

### **3. Production of clothes in India:**

- [http://www.svetvnakupnimkosiku.cz/napsali-o-nas-3/163-ct-24-nejznamejsi-odevni-firmy-maji-problem/;](http://www.svetvnakupnimkosiku.cz/napsali-o-nas-3/163-ct-24-nejznamejsi-odevni-firmy-maji-problem/)

### **4. The cultivation of coffee:**

- [http://www.ceskatelevize.cz/porady/10247864775-pribeh-y-z-afriky/208452801380006-kavova-spravedlnost/;](http://www.ceskatelevize.cz/porady/10247864775-pribeh-y-z-afriky/208452801380006-kavova-spravedlnost/)
- <http://www.ceskatelevize.cz/ct24/ekonomika/121499-miliardovy-bananovy-byznys-skryva-utrpeni-armady-delniku/?lang=sk;>

### **5. Facts about food ([www.sibirskezdravi.cz](http://www.sibirskezdravi.cz)):**

- <http://www.youtube.com/watch?v=L9mWQMwSbI0&feature=related;lang=sk;>

### **6. Critical evaluation of the conference RIO+20:**

- <http://www.antimeloun.cz/?p=2662>,
- resp. praises - <http://mladez.sk/2012/06/28/konferencia-rio20-hovorila-o-buducnosti-ktoru-chceme/?lang=sk;>

### **7. The crisis in British universities - what comes to the Czech Republic:**

- [http://www.youtube.com/embed/BsQmdwgnxWA?feature=player\\_embedded;](http://www.youtube.com/embed/BsQmdwgnxWA?feature=player_embedded;)

### **8. Criticism the current development in Slovakia, Europe and the world from the mouth of professor Peter Stanek:**

- <http://www.youtube.com/watch?v=bJY-IyJ4SAc;lang=sk>.

### **9. Criticism of unsustainable Slovak health care system by professor John Košturiak:**

- [http://blog.etrend.sk/jan-kosturiak/2012/08/22/draha-smrt/;](http://blog.etrend.sk/jan-kosturiak/2012/08/22/draha-smrt/)

### **10. Lay-off in Slovakia, September 2012:**

- [http://www.google.sk/#hl=sk&sclient=psy-ab&q=prep%C3%BA%C5%A1%C5%A5anie+na+slovensku%2C+september+2012&oq=prep%C3%BA%C5%A1%C5%A5anie+na+slovensku%2C+september+2012&gs\\_l=serp.3...9776.15064.2.15422.16.16.0.0.0.390.2012.5j10j0j1.16.0...0.0...1c.78xvCk0M034&pbx=1&bav=on.2.or.r\\_gc.r\\_pw.r\\_qf.&fp=c4131d045dd8a889&biw=1920&bih=1083;](http://www.google.sk/#hl=sk&sclient=psy-ab&q=prep%C3%BA%C5%A1%C5%A5anie+na+slovensku%2C+september+2012&oq=prep%C3%BA%C5%A1%C5%A5anie+na+slovensku%2C+september+2012&gs_l=serp.3...9776.15064.2.15422.16.16.0.0.0.390.2012.5j10j0j1.16.0...0.0...1c.78xvCk0M034&pbx=1&bav=on.2.or.r_gc.r_pw.r_qf.&fp=c4131d045dd8a889&biw=1920&bih=1083;)

11. Debate with professor Jan Keller on the background of the global crisis:
  - <http://www.youtube.com/watch?v=Wm6wj2EP2T4;lang=sk;>
12. Professor Jan Keller on poverty in the Czech Republic:
  - <http://www.youtube.com/watch?v=YopWk7mpZIE&feature=related;lang=sk;>
13. Interview with professor Milan Zelený on CT 24:
  - <http://www.youtube.com/watch?v=vsWANfoMnog;lang=sk;>
14. Baptism of book of Tomas Sedláček Economics of Good and Evil:
  - [http://www.youtube.com/watch?v=b\\_VOoBWAqw&feature=related;](http://www.youtube.com/watch?v=b_VOoBWAqw&feature=related;)
15. A member of the National Economic Council of the Czech Government (NERV) Tomas Sedláček predicts that if failure the process of change, there will come in 15 years deadly crisis:
  - <http://www.youtube.com/watch?v=p3CKWGpuqu4&feature=related;>
16. Miloš Zeman at the Law Faculty at Charles University in Prague, 14.5.2012:
  - <http://www.youtube.com/watch?v=eZd2UHxhN9s;>
17. The end of history and thinking of alternatives (Bělohradský, Kopecek, Májíček):
  - <http://www.youtube.com/watch?v=SmsnkuCIGz0&feature=related;lang=sk;>
18. The general crisis of world capitalism - the end of one era in the Czech Republic:
  - <http://www.youtube.com/watch?v=N52lK2xV2kE&feature=related;lang=sk;>
19. News of TV JOJ - End of Capitalism?
  - <http://www.youtube.com/watch?v=KsfyOHxYeJU&feature=related;lang=sk;>
20. The idea of American professors Porter, M.E. and Kramer, M. R. to save advantages of the capitalist system by modifying the CSR concept through the CSV (Creating Shared Value):
  - <http://hbr.org/2011/01/the-big-idea-creating-shared-value/ar/1;>
21. Controversy on websites of the Czech Management Association about the concept of CSV, which contributed to Professor Zbynek Pitra:
  - [http://www.cma.cz/Upload/Documents/aktuality/diskuse%20k%20HBR11-Porter.pdf,](http://www.cma.cz/Upload/Documents/aktuality/diskuse%20k%20HBR11-Porter.pdf)
  - [http://www.cma.cz/Upload/Documents/aktuality/HBR11-Porter.pdf.](http://www.cma.cz/Upload/Documents/aktuality/HBR11-Porter.pdf)

Even on the basis of selected documents and information we created own vision of the concept of sustainable corporate social responsibility, which is the only alternative for sustainable development on the planet Earth.

### **Our vision of the concept of sustainable corporate social responsibility**

Our vision of the concept of **sustainable corporate social responsibility** (SCSR) is based on the concept of **HCS model 3E** - [http://www.scss.sk/index.php?categoryid=14&p16\\_sectionid=21](http://www.scss.sk/index.php?categoryid=14&p16_sectionid=21) that is micro-solution of macro-problems (in terms of known theorem "think globally - act locally").

HCS model 3E was designed based on the results and knowledge gained during four years of the project research "Participatory Ergonomics."

This model understands man as an object as well as subject of all the efforts. We focus here on a concept in which working conditions are contributing to improving the quality of life for every employee in the long-term sustainable and acceptable conditions of environmental quality and efficient economic conditions.

**This model is based on the following assumptions and generally consists of the following steps:**



- 1. Information and mass media strategy for target population.**
- 2. Contacts with potential partners.**
- 3. Getting the support of the top management companies.**
- 4. Initiating the process of participatory ergonomics in stages:**
  - a) *Ergonomic analysis of working conditions and risk assessment.*
  - b) *Initiating the process of participatory ergonomics by informing examined employees and also top management in each of the enterprises (familiarity with risks - risk announcement).*
  - c) *Creating personal and material conditions for the process of participatory ergonomics (the prevention and control of risk - risk management).*
  - d) *Creating conditions for monitoring the effectiveness of measures taken.*
  - e) *Subsequent implementation preventive measures designed into practice in relevant enterprises.*

At the same time our vision of the concept of SCSR is based on a **modified Porter value chain** - <http://www.sjf.tuke.sk/transferinovacii/pages/archiv/transfer/21-2011/pdf/198-203.pdf> through which it is possible in the enterprise achieve sustainable creation of aggregate values of the enterprise.

The newly created enterprise department, SCSR, should therefore work together with the enterprise departments in planning and subsequent realization, control and improving enterprise activities and incline to a sustainable production, to promote sustainable consumption and sustainable marketing. The main task of the department SCSR in the context of SD should be transformation of global requirements to local measures and the related correction of enterprise activities, resulting in a value for which the customer is willing to pay.

**Within the sustainable production should be newly created enterprise department SCSR perform the following tasks:**

- *evaluation of the transformation process from the perspective of sustainability,*
- *collaboration when designing of production starting with inputs – use of renewable materials, raw materials and energy, technology and transportation not negatively affecting the humans and the environment, storage with an emphasis on no reduction of quality,*
- *collaboration in the design of the transformation process - assessment of the impact of the working environment for employees and negative impact on the environment, efforts to achieve zero waste,,*
- *collaboration in the design of production ending outputs - ecological products packaging, storage, distribution and avoidance of pressure on customers in order to sell the maximum amount of products, definition of environmentally sound disposal of obsolete or worn-out products, contributing to their destruction.*

**For the area of sustainable consumption should be newly created enterprise department SCSR perform the following tasks:**

- *participate in the public awareness on sustainable development and direct it to socially beneficial activities (volunteering, working with charities etc.),*
- *absent the pressure to customers with the aim of achieving enormous super profits,*
- *improve product performance while reducing material needs - reducing the environmental footprint.*

**The sphere of sustainable marketing will require from newly created enterprise department of SCSR fulfill the following tasks:**

- *cooperation in the enterprise presentation to the public as socially responsible entity contributing the development of society, quality of life, upholds practices nonthreatening the ecosystem and stand aloof from unfair practices,*
- *assessment of supply and customer value chains in terms of corporate social responsibility and sustainable development,*
- *assessment of supply and customer value chains in terms of corporate social responsibility and sustainable development.*

## Conclusion

In the limited space for this article we have tried to bring the current state of the global impact of the crisis on the population of the planet Earth and own vision of SCSR concept and steps we are taking continuously for its implementation. We know that human prosperity is based on responsible entrepreneurship, responsible productive material production and providing real responsible service. The reward is then legitimate / sustainable profit and sustainable wage in the context of the concept of CSV.

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## **KEY PERFORMANCE INDICATORS FOR SUPPORTING DECISION- MAKING PROCESS IN MAKE-TO-ORDER MANUFACTURING**

Anna SANIUK<sup>1</sup>, Martina JAKÁBOVÁ<sup>2</sup>

### **Abstract**

*In conditions of global crisis demand falls and pressure on price reduction increases. A significant implication is that enterprises begin to pay more attention to cost management, economic effectiveness and efficiency of business processes. Performance measurement systems (PMS) are tools widely used for the management of enterprises and in decision-making processes to assess the level of accomplishment of objectives including different kinds of indicators. The first one there are elements which can be measured (e.g. quantity, frequency) and other ones which cannot be measured, but it is possible to assess them using an appropriate scale. In this paper a new approach of performance management in make-to-order sector is proposed. The use of key performance indicators (KPI's) to assess effectiveness of business processes for make-to-order manufacturing is suggested. These indicators help to guarantee appropriate degree of product quality, execution time and costs of orders. KPI's allow the re-planning of objectives and the decision-making process to be improved.*

### **Key words**

*Key Performance Indicators, Make-to-order Manufacturing, Performance Management*

### **Introduction**

The current competitive context puts manufacturers under increasing pressure to provide products that meet the particular requirements of individual customers, calling for high flexibility in business processes. The make-to-order sector is marked by the complexity and the uncertainty of demand. So the ability to deal with more and more differentiated requirements in terms of products features, delivery lead time and cost is crucial. Due date quotation and capacity evaluation at the customer enquiry stage are of a strategic importance

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to be competitive. They have the large impact on the company performance. Despite of that due date setting, order acceptance processes and related decisions is often underestimated in practice (9), (14). The nature of the problem is: how connect operational decisions about production order acceptance with strategy of the company?

Good preparation of the planning, organizing, monitoring and control of performance of business processes, along with an efficient decision making process enables companies to develop and take advantage of business opportunities. The decision making process has to be analysed not only according to the most profitable option, but also to consider important information such as: influence of nonfinancial factors, conformity of decisions taken with overall enterprise strategy, influence of company functioning determinants and its environment on the decision making process, varying probability of different events occurring, costs of obtaining information, lack of information about total costs of different solutions, and influence of decision-makers' character on decisions which are made (11).

Nowadays, a process approach is most popular in organization management, which is based on the assumption that activities should be optimized to take processes into account, rather than functions. The process approach is the result of the need to seek new sources of performance growth in enterprises. Very high adaptational abilities are expected of organizations, which means the ability to quickly adjust the course of processes to individual customers requirements is expected (process individualization). Companies try all the time to increase performance and to optimize the use of resources which they possess (3).

The make-to-order (MTO) sector of enterprises, which manufacture their products according to production orders, has grown. Organizations very often form different kinds of strategic alliances, which have led to the popularization of the organization-network model, which consists of small units with simple skills that give a competitive advantage (4).

Low costs and short time of production order realization have become key success factors in make-to-order manufacturing (14). The small and medium manufacturing enterprises sector must adapt to different customer needs. To save time and reduce the cost of manufacturing products, a company can be seen as a set of business processes. Manufacturing companies must strive to reduce the time and costs of business processes in a way that does not cause deterioration in the quality of the manufactured products.

In the paper a new approach of performance management in make-to-order sector is proposed. The main goal of this paper is to investigate the possibility of using Key Performance Indicators (KPI's) to measure and assess effectiveness of business processes for make-to-order manufacturing. Consideration of KPI's in the decision-making process concerning production order realization allows permanent monitoring and control of the strategy realization of the company in day by day decisions. These indicators help to guarantee an appropriate degree of product quality, execution time and costs of orders. KPI's allow the re-planning of objectives and the decision-making process to be improved.

### **Implementation of performance management in make-to-order enterprises**

An important problem of enterprises operating make-to-order manufacturing is as follows: how to link the strategy of the enterprise, which usually changes very quickly, with operational planning and conditions which are investigated during production order verification? In this paper a new approach in make-to-order sector to implement is proposed.

Performance Management (PM) is a concept of management which focuses on providing employees with information necessary for the effective performance of their duties. PM includes the area associated with the planning, measurement and evaluation of the effectiveness of the organization (10). According to M. Sumiński the main goal of PM is the integration of all the financial and operational data, ensuring their quality, reliability and availability (10).

Controlling systems have high dynamics of data. New objectives and strategic directions, projects and products must be reflected very quickly in plans, budgets, forecasts and management reports. The system must function in a manner responsive to the constant changes in the enterprise. The basic requirement for this system is the ease of making changes (10). Strategic controlling in the enterprise combines two functions: a provider of information and business advisers (8).

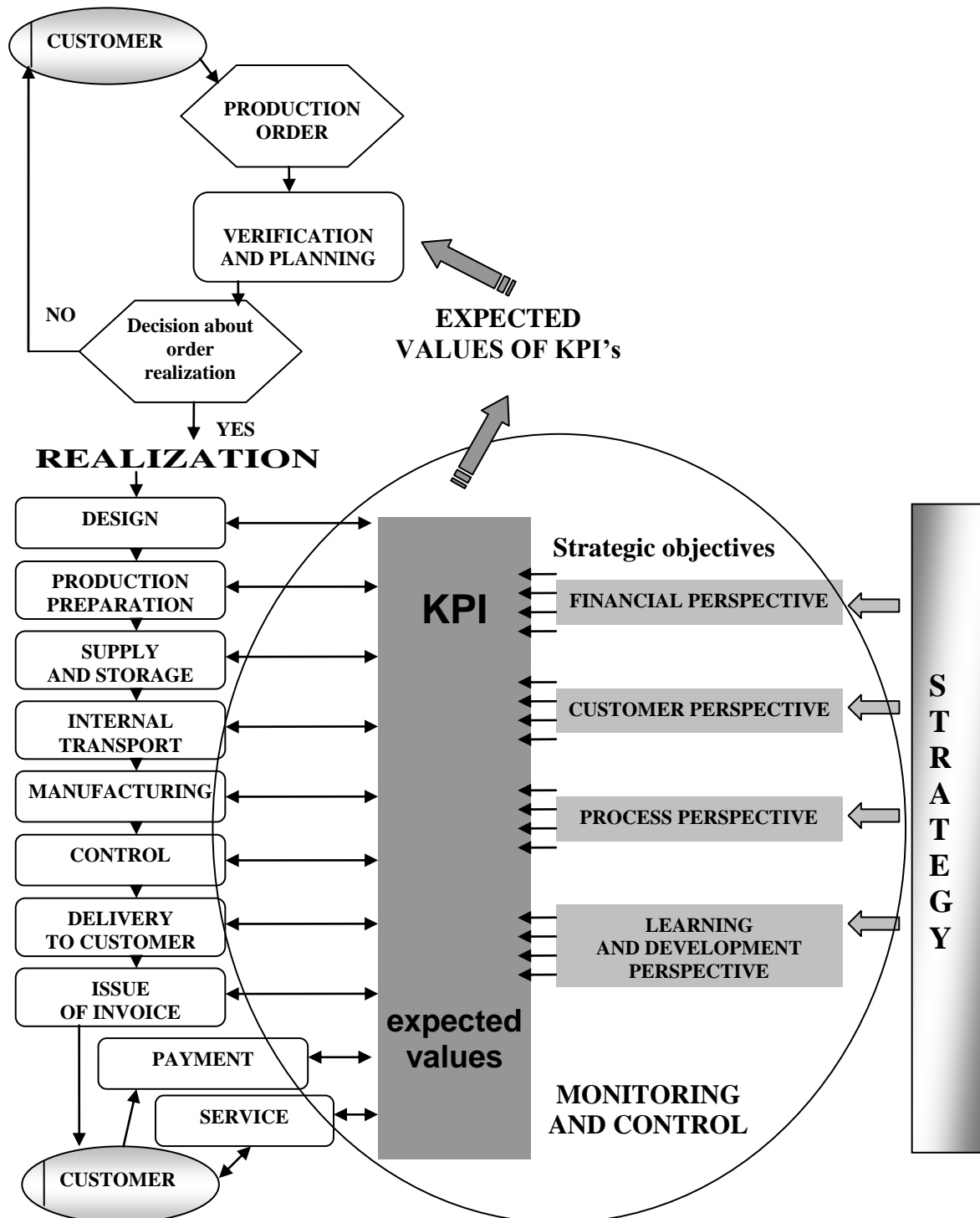
The modern structure is built around processes, which are treated as dynamic objects around which to build a system of relationships within an organization. The process is a set of sequential steps that are associated with the cause-effect dependencies (3). The process is a series of activities or tasks that leads to the creation of a specific product (1). The results of the preceding activities are the inputs to the activities which follow, i.e. the input is transformed and enriched by the added-value which is a result of the process (3). In accordance with process management, the company manufactures products using available resources. Process management is understood as an activity which relies on optimizing the structure of the elements of the organization with regard to their impact on the creation of the final value of the effect of separate processes. It seeks to maximize participation of those elements which add value and minimize the participation of inefficient operations within the structure of the organization (3).

A significant implication is that enterprises begin to pay more attention to cost management and economic effectiveness and efficiency of business processes. Performance measurement systems (PMS) are tools widely used for the management of enterprises and in decision-making processes to assess the level of accomplishment of objectives including different kinds of indicators. There are elements which can be measured (e.g. quantity, frequency) and others which cannot be measured, however, it is possible to assess them using an appropriate scale.

Enterprises are constantly changing. The success of enterprises depends more and more often on factors which cannot be measured by the means of financial metrics (e.g. the relationship with the client, a rich and well organized network of suppliers, etc.). The financial system of measuring efficiency in such conditions is no longer efficient, and indeed prevents monitoring of the implementation of the strategy.

A strategy can be effectively implemented by using Key Performance Indicators (KPI's) where the role of non-financial indicators is particularly important (6). They allow planning for frequently changing enterprise strategies and objectives to be quickly adjusted and the strategic objectives of the company and the implementation of operational measures (financial and non-financial) to be linked (8). Besides, strategy is closely linked to the analysis of cause and effect relationship scores. These relationships describe the strategic logic, showing how investing in employees, information systems and innovative products leads to improved future financial results. The mission and strategy of the organization is transformed into a coherent set of measures of performance, which is the framework of a strategic management

system (6). KPI's allow business processes performance to be measured and to take into consideration expected levels of key performance indicators to verify production orders. KPI's can link the strategy of the enterprise with a decision-making process concerning production order acceptance, operational planning of order realization, and order realization, which is presented in Figure 1.



*Fig. 1 The scheme of performance management in make-to-order enterprises.  
Source: own study*

The authors of papers propose to implement a new approach of performance management in make-to-order manufacturing. This approach includes two parts. The strategy formulation and using Key Performance Indicators to measure performance of business processes are in the first part. The monitoring and control of a strategy realization, adjusting of verification of production orders and a decision-making process about orders acceptance to an enterprise strategy realization are the second part. The proposed by authors approach of performance management in make-to-order manufacturing consists of nine steps:

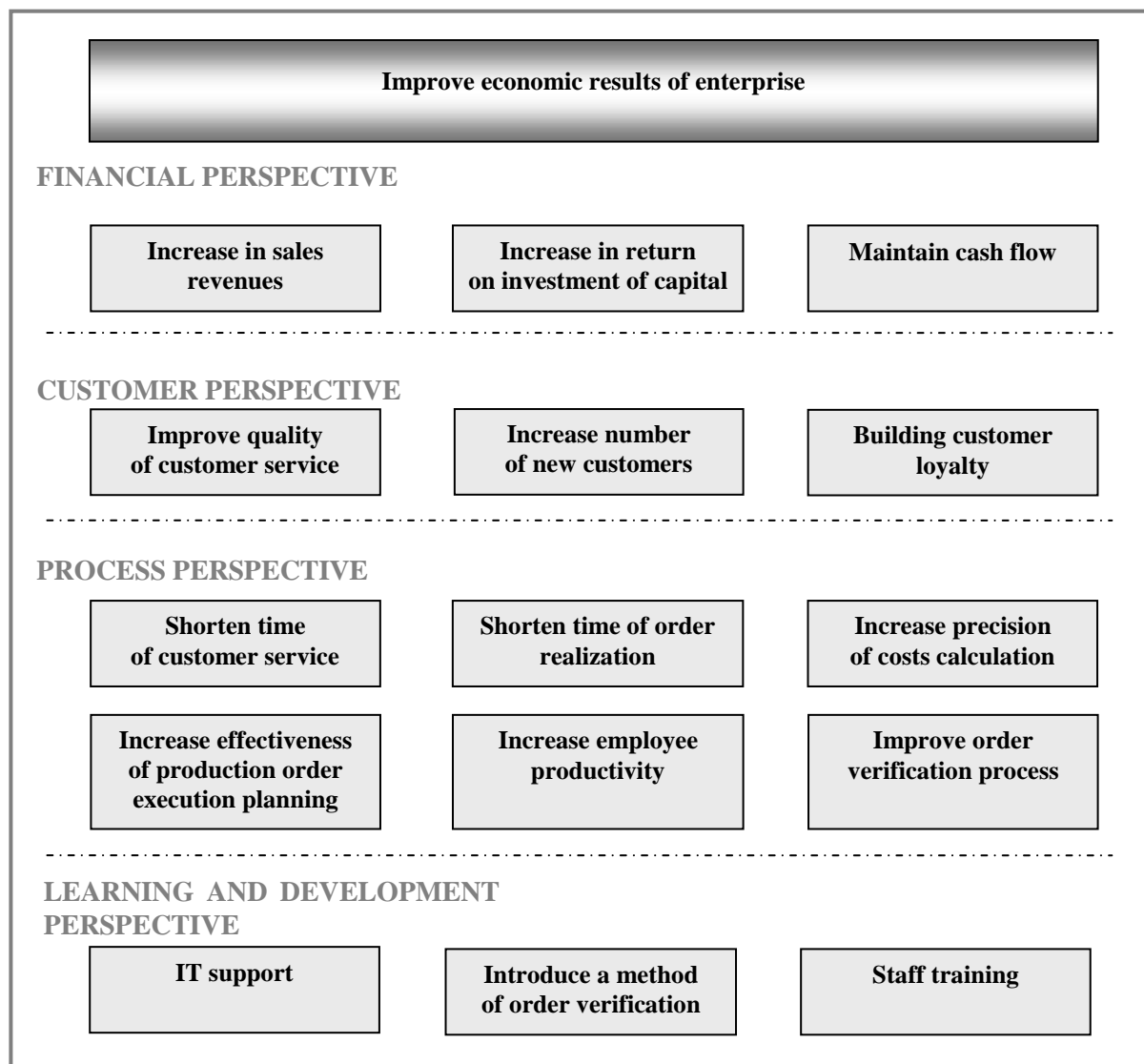
1. clarify and translate vision and strategy;
2. determine strategic objectives in four perspectives;
3. determine key performance indicators (KPI) for each strategic objective;
4. determine expected values of all KPI's;
5. monitoring actual values of KPI's;
6. compare actual values with expected values of KPI's;
7. determine causes of deviations;
8. correction of business processes;
9. consider performance measurement in verification of production orders and a decision-making process about production order realization.

First the enterprise should formulate vision and strategy of company for next few years. After clarification of vision and strategy, strategic objectives in four perspectives: financial, customer, process, and learning and development are established (see next paragraph). It can be used a strategy map which is a tool which helps to formulate strategic objectives in four perspectives and show relationships between them (7). Then key performance indicators for each strategic objective are determined. The main task of KPI's is business processes to measure. The next step relies on formulating the expected values of KPI's. The enterprise managers should be explained what values of KPI's guarantee to realize a strategy in defined time. Next an enterprise must control and monitor a strategy realization. It is tested what are actual values of KPI's and they are compared with expected values of KPI's. Causes of deviations should be carefully identified. According to them must be defined a plan of business processes correction. The main part of the proposed approach is consider performance measurement in verification of production orders and a decision-making process about production order realization. The proposed approach allows a long-term strategy of a company with a daily decision-making process about order realization, to be linked. It guarantees that verification of production orders based on the indicators which help a strategy to realize in the company.

### **Measurement of business processes performance**

Measuring the performance of business processes should be determined on the basis of the specific objectives in each of the four perspectives: financial, customer, process and learning and development (or knowledge and development). Each of them should be determined by strategic objectives, measures, specific objectives and activities (2). The financial perspective shows how the company is perceived by its owners (i.e. shareholders). It is an essential element because the defined level of return on investment is the most important objective of the manufacturing enterprise's functioning. The other perspectives should contribute to the implementation of the financial perspective's objectives. The perspective of the customer shows how the enterprise should be seen by customers. The internal processes perspective determines which processes should be improved to measure up to the expectations

of clients and owners. In the perspective of lifelong learning and development, ways to create the potential for change and improvement in the enterprise in the future should be sought (6). The potential here is understood to mean the intangible infrastructure, i.e. employees, organization of information systems, culture, etc. The strategic goals in four perspectives for enterprise from make-to-order sector are presented in Figure 2.



**Fig. 2** Strategic goals of the enterprise from make-to-order sector  
Source: own study

The financial perspective is a long-term objective of the functioning of the enterprise. It can be measured using a variety of indicators. Most commonly applied are: the size of revenue, profitability indicators, as well as the value for the shareholders (in joint-stock company) (12).

According to Kaplan and Norton, the financial strategy of the company may be achieved by two levers: increasing revenue, and productivity growth (5). The increase in revenue can be obtained through new sources of income (e.g. new products, new customers, new markets, etc.) or by increasing the value of the revenue of currently supported clients (e.g. creation and satisfaction of new needs, deepening relationships with customer, offering new products to current customers, etc.). Productivity growth strategy is based on the assumption that the effects can be achieved by reducing financial costs or optimizing the utilization of assets held. Therefore, the strategy focuses on improving productivity by: reducing direct or indirect production costs, improving the structure of expenditure, and increasing efficiency in the use of assets held by minimizing the size of working capital, as a result of the increase in the efficiency of operational processes (12). Establishment of objectives in the customer perspective depends on the kind of customers and their needs. The company has to determine what a value to the customer is. That value can be: descriptions of products, prices, relations, image, and other attributes (12). M. Treacy and F. Wiersema formulated three strategies of value for customer (13):

- strategy of operational value – is connected with continuously maintaining competitive prices, high quality of products, wide range of products, short time of production order realization and delivery;
- strategy of intimacy with customer – create relation with receivers through addition of extra services to the main offer and guarantee the highest level of completeness of an offer;
- strategy of product leadership – rely on care of specific products: product brand and knowledge and market reputation of a company.

Enterprises usually adopt all the strategies together; however, one of them is usually a dominant strategy. There are four groups of processes in process perspective (internal process perspective) according to R. S. Kaplan and D. P. Norton (6):

- operational management processes;
- customer management processes;
- innovative processes;
- control (regulatory) and social processes.

Operational management processes are simple, daily processes, which allow products to be manufactured, service to be provided and delivery made to customers. These are: material purchasing, production processes, provision of service, distribution of products and risk management. Customer management processes rely on extending and increasing contact with customers. This includes: selection of target customer segments; taking the target customers and maintaining and managing the customer relationship (CRM) (12). Through the processes of innovative new products and services, the following modification of processes and new markets and customer segments are obtained. Innovative processes include the identification of opportunities associated with new products and services and the introduction of new products and services to the market. From the perspective of knowledge and development of intangible assets of the organization and their role described in the process of implementation of the strategy, the most important intangible resources include (12):

- human capital;
- information capital;
- organization capital.

## Conclusion

A make-to-order sector is a specific kind of organization according to a management. A decision-making process about production order acceptance plays a key part in enterprise. A strategy should be translated to the conditions concerning order verification. There are a lot of factors which have to include in the moment of order realization planning. Implementation of Performance Management in enterprises with make-to-order manufacturing help to monitoring and control of business processes and formulate conditions which are a base to verify the production orders. Measuring the performance of business processes in enterprises allows the realization of strategy to be assessed and quality of processes to be controlled and monitored. Key performance indicators help to guarantee an appropriate degree of product quality, execution time and costs of orders. KPI's allow the re-planning of strategic objectives. Furthermore, KPI's can be used to support a decision-making process concerning acceptance of production order and execution. A presentation of the new approach was the main goal of this paper. A detailed description of a strategy map building and indicators creating will be published in next scientific papers.

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