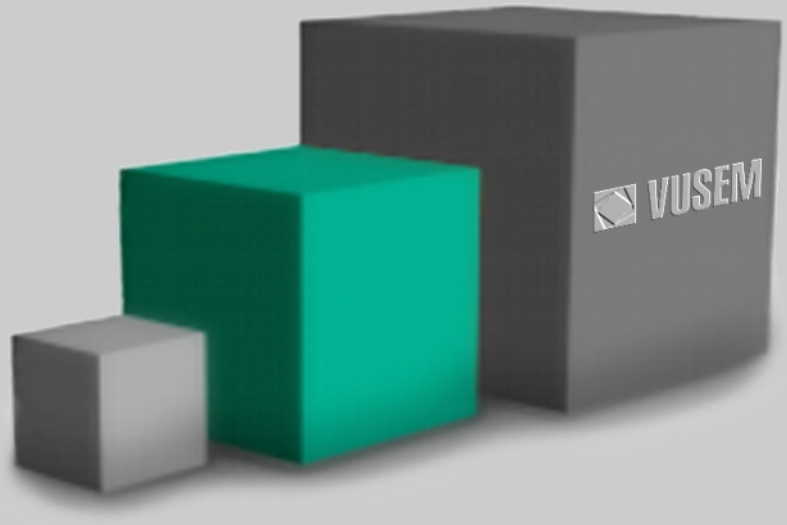


**Vedecký časopis**
Výskumného ústavu ekonomiky
a manažmentu

**Výkonnosť podniku**
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# Výkonnosť podniku

# Výkonnosť podniku

**Vydavateľ**
Výskumný ústav ekonomiky a manažmentu, s. r. o.
Franciscího 910/8
058 01 Poprad

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**Grafická úprava**
Ing. Mária Kožárová

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# Obsah

## Vedecké state

# EKONOMICKÉ OPATRENIA NA ZABRÁNENIE ÚPADKU VERITEĽA V KONKURZNOM KONANÍ

*Economic actions to prevent bankruptcy of the creditor in bankruptcy proceedings*

**Suchý Tomáš, Hudecová Eva**

**Abstract**

This article is focused on the explanation of bankruptcy proceeding fundamentals from the perspective of economic actions to prevent bankruptcy of the creditor. Economic actions in the bankruptcy proceedings form and affect the status of creditors in bankruptcy proceedings and effective working of their businesses.

**Key Words**

bankruptcy proceeding, economic actions, creditor, bankruptcy

**Abstrakt**

Príspevok sa venuje objasneniu podstaty konkurzného konania z pohľadu ekonomických opatrení na zabránenie úpadku veriteľa. Ekonomické opatrenia v konkurznom konaní formujú a ovplyvňujú postavenie veriteľov v konkurznom konaní a efektívne fungovanie ich podnikov.

**Kľúčové slová**

konkurzné konanie, ekonomické opatrenia, veriteľ, konkurz

**JEL Classification:** E20

## Úvod

Dlhodobá zlá a neriešená finančná situácia podnikov vedie v mnohých prípadoch až ku konkurzu alebo k menej definitívnej, reštrukturalizácii podniku. Rovnako zlé je konkurzné konanie aj pre podniky, ktoré sú v takejto situácii veriteľmi. Platobná neschopnosť podnikov v konkurze môže do veľkej miery ovplyvniť finančno-ekonomickú situáciu jeho veriteľov, ovplyvňuje ich výkonnosť a následne aj finančné zdravie jeho veriteľov. V súčasnosti nie je ničím výnimočná platobná neschopnosť podnikov. Príčinou je väčšinou neskoré reagovanie podniku na prichádzajúce podnety z externého a interného prostredia. Ak podnik nie je dostatočne výkonný a jeho finančno-ekonomické ukazovatele nedosahujú požadované hodnoty, je v extrémnom prípade nutné pristúpiť až ku konkurznému konaniu. Hodnotenie výkonnosti podniku vychádza z hodnotenia schopnosti podniku dosiahnuť želané finančné ukazovatele. Za výkonný sa považuje podnik, ktorý dosahuje plánované finančné výsledky. Avšak výkonnosť podniku môže byť ovplyvnená nielen v prípade, ak sa do konkurzu dostane, ale rovnako aj vtedy, ak sa stane veriteľom podniku v konkurznom konaní.

Konkurzné konanie je totiž negatívne nielen pre podniky, ktoré sa do konania dostanú, ale rovnako nepriaznivá je táto situácia aj pre veriteľov daného podniku. Vymáhanie pohľadávok je veľmi problematické, často časovo náročné a do veľkej miery môže mať významný vplyv na ekonomiku podniku, nakoľko vymožiteľnosť pohľadávok veriteľov je veľmi nízka. Do konkurzov sa často dostávajú podniky, ktoré sú už úplne bez majetku, ktorý by sa dal speňažiť, a z ktorého by sa vyrovnali jeho veritelia. Včasné odhalenie takého podniku je pre veriteľov kľúčové.

## 1. Výskum opatrení na zabránenie úpadku veriteľa

Významnými subjektmi a účastníkmi konkurzných konaní sú veritelia, ktorí si v konkurznom konaní uplatňujú prihlášku svojich pohľadávok, na ktoré majú nárok. Veritelia majú významnú úlohu pri správe konkurznej podstaty. Ich účasť v konkurznom konaní sa odvíja od ich prihlásených pohľadávok, pretože účastníkmi konkurzného konania sú počas celej doby, kým je pohľadávka predmetom konkurzného konania a je v ňom prejednávaná. Všeobecne veriteľov delíme na dve skupiny, a to zaistení veritelia (prevažne banky), ktorí sú uspokojení z oddelených majetkových podstát a nezaistení (bežní) veritelia, ktorí sú uspokojení zo všeobecnej majetkovej podstaty.

Pre potreby výskumu sa budeme na veriteľov pozerať aj z pohľadu veľkosti podniku, čím chceme zdôrazniť rozdiely v nimi prijatých opatreniach, ktoré by zabránili veriteľom dostať sa do druhotnej platobnej neschopnosti. Základným účelom zákona o konkurze a reštrukturalizácii je zabezpečenie veriteľov, ak sa dlžník dostane do úpadku. Nariadenie Európskej únie o konkurznom konaní bolo rieši otázky cezhraničnej insolventnosti prostredníctvom uznávania a koordinácie vnútroštatnych konkurzných konaní najmä z dôvodu, aby rozdiely vo vnútroštátnych právnych predpisoch neviedli k nižším výťažkom pre veriteľov a nerovnakému zachádzaniu s veriteľmi z rôznych členských štátov Európskej únie. Transparentnosť a účinnosť konkurzných konaní majú značný vplyv na schopnosť veriteľov dosiahnuť výsledok konkurzných konaní, ktorý by bol pre nich uspokojivý.

Z uvedeného vyplýva, že pri procese uplatňovania pohľadávok sa čoraz viac presadzuje nevyhnutnosť posilnenia právnej istoty veriteľov tým, že ich pohľadávky budú skutočne splnené. V Slovenskej republike sú vytvorené zaisťovacie nástroje a opatrenia, ktoré sú využívané na vymáhanie pohľadávok v prospech veriteľa a tieto opatrenia sú predmetom nasledujúceho výskumu dizertačnej práce. Každý spôsob vymáhania pohľadávok má svoje silné a slabé stránky a za ich elementárne členenie považujeme ich rozdelenie na súdne alebo mimosúdne. Súčasný priebeh konkurzného konania v rozmanitých a komplikovaných prípadoch môže trvať aj 5 a viac rokov, čím často dochádza k narušeniu základného cieľa konkurzného konania. V súčasnosti veľké problémy spôsobuje aj obmedzená kapacita konkurzných sudcov, vzťahy medzi účastníkmi konkurzného konania a často i neadekvátne konanie správcov konkurznej podstaty.

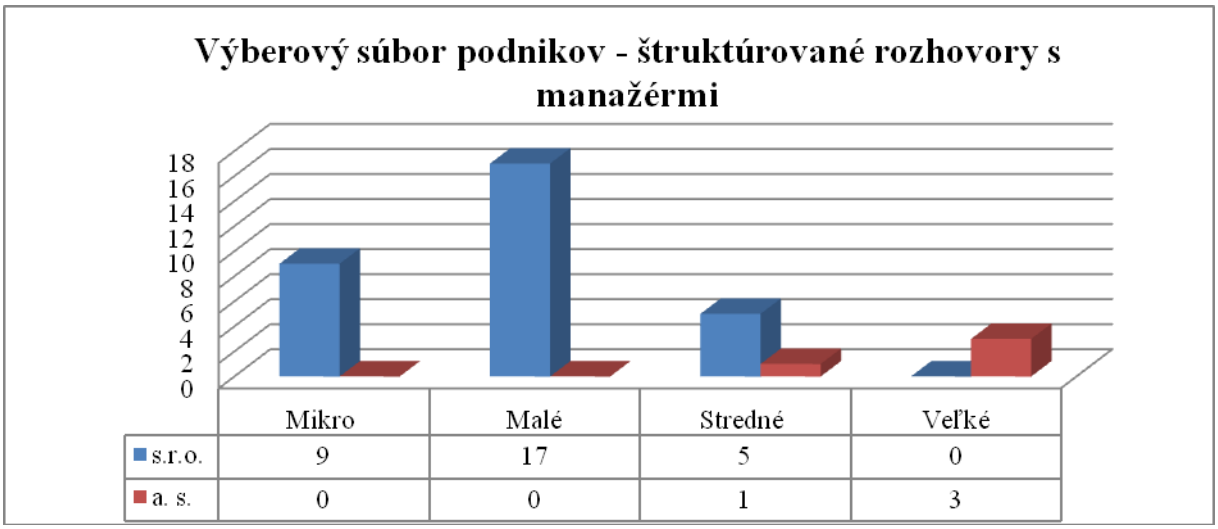
**Metodika výskumu a výberový súbor**

Predmetom výskumu je analýza návrhu 20 opatrení, ktoré sú v praxi využiteľné pre udržateľnosť podniku veriteľa. Tieto opatrenia boli navrhnuté na základe štúdia relevantných bibliografických zdrojov pojednávajúcich o možných postupoch veriteľa v konkurznom konaní a pri vymáhaní pohľadávok. Teoretické poznatky tejto oblasti sme konfrontovali s názormi viacerých odborníkov z právnickej praxe, ktorí sa problematike konkurzných konaní dlhodobo venujú a dennodenne prichádzajú do styku s mnohými nástrojmi a opatreniami, ktoré využívajú rôzne typy veriteľov na to, aby ich pohľadávky boli v maximálnej možnej miere uspokojené. Metódou abstrakcie, ktorá je využívaná na myšlienkové vylučovanie súvislostí, ktoré sťažujú hlbší prienik do skúmanej problematiky, sme identifikovali a navrhli 20 opatrení, ktoré veritelia môžu využiť na zabezpečenie udržateľnosti svojho podnikania, bez ohľadu na veľkosť veriteľských subjetov.

Výskumom opatrení na zabezpečenie udržateľnosti podnikania v postavení veriteľa sme primárne chceli identifikovať existujúce rozdiely v prijímaných opatreniach z hľadiska veľkostnej štruktúry podnikov, ktoré sú v postavení veriteľa. Hospodárske problémy úpadcu môžu mať rôzny dosah na veriteľov, ktorých z hľadiska veľkosti kategorizujeme na mikro, malé, stredné a veľké podniky. Napríklad predstavitelia niektorých malých podnikov sa domnievajú, že mikropodniky a malé podniky ako veritelia prichádzajú o neprimeraný podiel neuspokojených pohľadávok v konkurznom konaní v dôsledku zdĺhavosti týchto konaní a vnútroštátnych pravidiel priority. Z tohto dôvodu je žiaduce preskúmať, aké opatrenia prijímajú jednotliví veritelia v rôznych veľkostných kategóriách podnikov.

Náhodným výberom sme oslovili 60 podnikov, ktoré sú v postavení veriteľa v konkurznom konaní v Slovenskej republike so žiadosťou o uskutočnenie riadeného štruktúrovaného rozhovoru s predstaviteľmi manažmentu. Našej žiadosti vyhovelo 35 podnikov rôznej veľkostnej kategórie, v ktorých sme vykonali štruktúrovaný rozhovor s manažérmi, ktorý mal presné a rovnaké vymedzenie otázok pri každom opytovanom respondentovi. Zhromaždené údaje od 35 respondentov sme hromande spracovali, roztriedili podľa kritéria veľkosti podniku. Následne sme analyzovali a porovnávali výsledky za jednotlivé veľkostné skupiny podnikov, ktoré náhodne vybraní respondenti reprezentovali. Výberový súbor podnikov pozostával z mikro, malých, stredných a veľkých podnikov,

ktoré sa nachádzajú v postavení veriteľa v konkurznom konaní, a ktoré z hľadiska právnej formy delíme na akciové spoločnosti a spoločnosti s ručením obmedzeným. Výberový súbor v jeho členení je zobrazený na obrázku 1.




Obrázok 1 Výberový súbor podnikov

Prameň: Vlastné spracovanie.

Obrázok 1 ilustruje štruktúru výberového súboru. Najpočetnejšie zastúpenie podnikov, ktoré súhlasili s vykonaním štruktúrovaného rozhovoru, tvoria malé podniky, ktoré predstavujú 49 % z celkového počtu podnikov zapojených do výskumu opatrení udržateľnosti podnikania v postavení veriteľa. Nasledujú mikro podniky, ktoré predstavujú 26 % vzorku. Ich veľký záujem o účasť v tomto výskume potvrdzuje aj vyššie uvedená premisa, že prevažná väčšina veriteľov z tejto kategórie podnikov prichádza o neprimeraný podiel neuspokojených pohľadávok v konkurznom konaní. Z tohto dôvodu musia svoju situáciu riešiť využitím rozmanitej škály opatrení, aby ich podnikanie nebolo ohrozené tým, že sa dostali do konkurzného konania, aj keď v postavení veriteľa. Stredné podniky, ktorých zastúpenie tvorilo 17 %, spolu s veľkými podnikmi s najmenším, iba 9 % zastúpením, sa v praxi často z pohľadu malých podnikov považujú za „dominantných veriteľov“, ktorí sa môžu aktívnejšie podieľať na konkurznom konaní prostredníctvom účasti svojich predstaviteľov vo veriteľských orgánoch.

## 2. Výsledky výskumu diferencované podľa veľkosti podniku

V konkurzných konaniach existuje mnohorakosť veriteľov s rôznymi záujmami. Konkurzné konanie by malo prispieť k rýchlemu, hospodárnemu a čo najvyššiemu uspokojeniu veriteľov. V podnikovej a právnickej praxi však existujú rôzne situácie, pri ktorých niekedy môže dochádzať k uspokojeniu jednej skupiny veriteľov (zvyčajne väčších) na úkor iných veriteľov. Preto aj rôzne opatrenia, ktoré podniky v postavení veriteľov prijímajú, môžu byť rôzne nielen z hľadiska zaistenosti a nezaistenosti pohľadávok veriteľov, ale aj z hľadiska veľkosti podniku veriteľa, ktorý je subjektom konkurzného konania.

Pohľadávky sú súčasťou každodenného obchodného života zo vzniku právnych úkonov, zmlúv alebo iných skutočností. K dosiahnutiu právnej istoty, že pohľadávky z obchodných vzťahov budú včas a v plnej miere splnené dlžníkmi, slúžia rôzne zaisťovacie právne prostriedky v podobe záložných alebo zádržných práv, prípadne ručením. Napriek veľkej snahe zo strany veriteľov je v súčastnosti nemožné vyhnúť sa problémom, ktoré vyplývajú z insolventnosti obchodného partnera.

Navrhované opatrenia, ktoré boli výberovému súboru podnikov prezentované pri štruktúrovaných rozhovoroch sú uvedené v tabuľke 1. Predstaviteľov manažmentu analyzovaných podnikov sme sa pýtali na všetky uvedené navrhované opatrenia. Predstavitelia manažmentu mali priestor vyjadriť sa

o významnosti a využiteľnosti prípadne nevyužiteľnosti jednotlivých opatrení v podnikovej praxi v ich postavení veriteľa, vzhľadom na veľkosť podniku.

Tabuľka 1 Zoznam navrhovaných opatrení na udržateľnosť podnikania v postavení veriteľa

| P. č. | Opatrenie | P. č. | Opatrenie |
|---|---|---|---|
| 1. | Hľadanie a vstup strategického partnera | 11. | Predaj budov alebo pozemkov |
| 2. | Neformálna (mimosúdna dohoda) splátkový kalendár pre dlžníka | 12. | Predaj strojov a zariadení |
| 3. | Rozhodcovský súd | 13. | Predaj ostatného hnuteľného majetku |
| 4. | Žaloba na vydanie platobného rozkazu | 14. | Predaj cenných papierov |
| 5. | Outsourcing vymáhania pohľadávky | 15. | Reštrukturalizácia |
| 6. | Predaj pohľadávok tretej strane (factoring, forfaiting) | 16. | Vstup do konkurzu |
| 7. | Uvoľnovanie administratívnych alebo výkonných zamestnancov | 17. | Mimoriadny vklad spoločníkov – zvýšenie ZI |
| 8. | Zníženie pracovných úvezkov | 18. | Pôžička od spoločníkov |
| 9. | Zavedenie flexi konta | 19. | Dodávateľský úver |
| 10. | ,,Nútená dovolenka“ | 20. | Bankové úvery |

Prameň: Vlastné spracovanie.

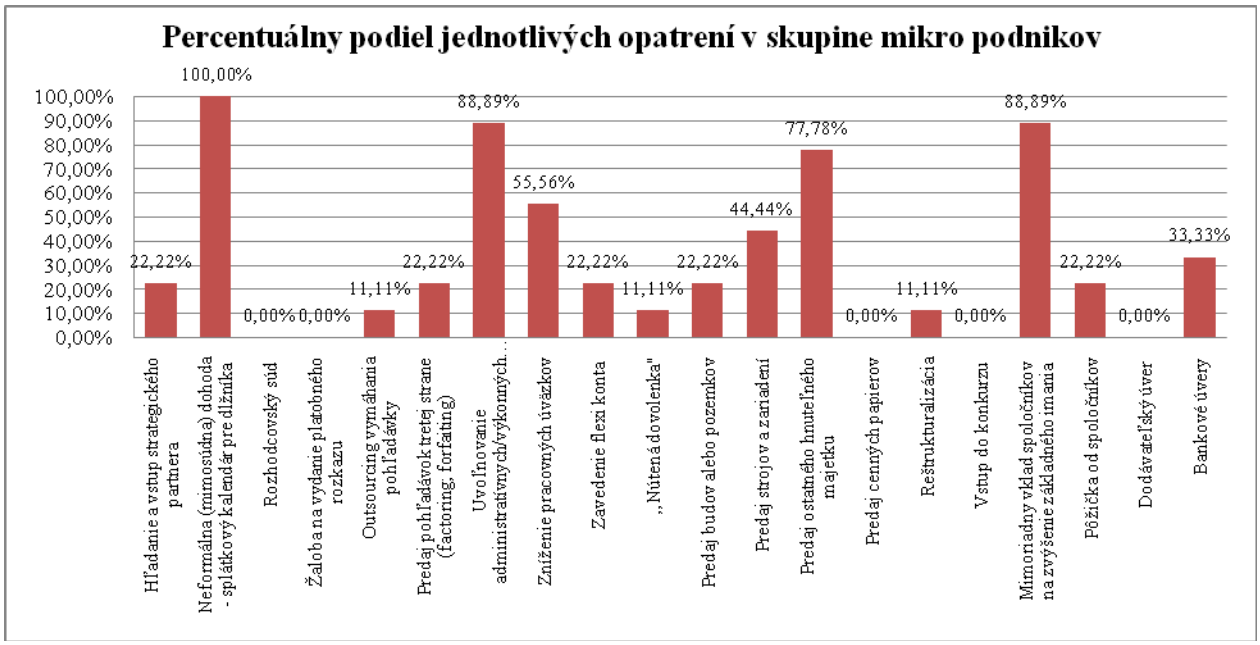
Zo štruktúrovaných rozhovorov s manažérmi analyzovaných podnikov sme sa dozvedeli, že s riešením krízovej situácie, ktorá vznikla v podniku veriteľa z dôvodu neplnenia pohľadávky dlžníkom, majú skúmané podniky veľa skúseností. Veritelia využívajú rôzne nástroje, ktoré by zabránili vzniku reťazovej reakcie v podobe problémov, ktoré môžu ovplyvniť aj ich platobnú schopnosť. Ak veriteľ promptne nerieši vzniknutú nepriaznivú situáciu a nepríjme potrebné opatrenia, sám sa môže stať insolventným, čím sa môže stať aj z veriteľa úpadca.

Väčšina z analyzovaných podnikov sa vyjadrila, že pri výbere opatrení sú pre nich rozhodujúce náklady (nie iba tie finančne vyčísliteľné, ale aj časové). Veritelia si tak vyberajú také opatrenia, ktoré im spôsobia čo najmenšiu ujmu pri čo najväčšom dosiahnutom efekte. Spôsoby, akými veritelia dosiahnu plnenie pohľadávky dlžníkom, sa od seba odlišujú časom vymožiteľnosti pohľadávky, veľkosťou vymoženej čiastky, oporou v zákone, na základe predchádzajúcich skúseností, likvidity podniku a podobne. Prijatie konkrétneho opatrenia je predovšetkým v rukách veriteľov, ktorých pre potreby výskumu delíme na štyri skupiny rešpektujúc kritérium veľkosti podniku.

Neoddeliteľnou súčasťou každého vyspelého hospodárstva je kvalita podnikateľského prostredia, ktorá je predpokladom dlhodobého rozvoja podnikateľských aktivít, a ktorá v súčasnosti prispieva nie k maximálnej výkonnosti ekonomiky, ale k udržateľnému zvyšovaniu výkonnosti ekonomiky a životnej úrovne. Medzi hybné sily takéhoto kvalitného podnikateľského prostredia môžeme zaradiť mikro a malé podniky, ktoré svojimi výkonmi prispievajú vo výraznej miere k rastu hrubého domáceho produktu. Novelou zákona o konkurze a reštrukturalizácii sa spriechodnili veriteľské návrhy na vyhlásenie konkurzu z dôvodu platobnej neschopnosti dlžníka, čím sa vytvoril tlak na dodržiavane platobnej disciplíny. Cieľom tejto novely bolo aj zvýšenie motivácie na včasné riešenie hroziaceho úpadku.

Výsledky štruktúrovaných rozhovorov s predstaviteľmi mikropodnikov však potvrdili opak. Môže byť problematické zosúladiť rozdielne očakávania veriteľov konkurzných konaní podľa veľkosti. Veritelia v mikropodnikoch často využívajú opatrenia, pri ktorých dochádza k individuálnemu vymáhaniu nárokov a nemajú snahu iniciovať konkurzné konania voči svojim dlžníkom, v rámci ktorého by podnietili vznik kolektívneho konkurzného konania. Tento výsledok prezentuje aj obrázok 2. Žiaden z opýtaných predstaviteľov mikropodnikov nepovažoval opatrenie v podobe konkurzného konania za vhodné.

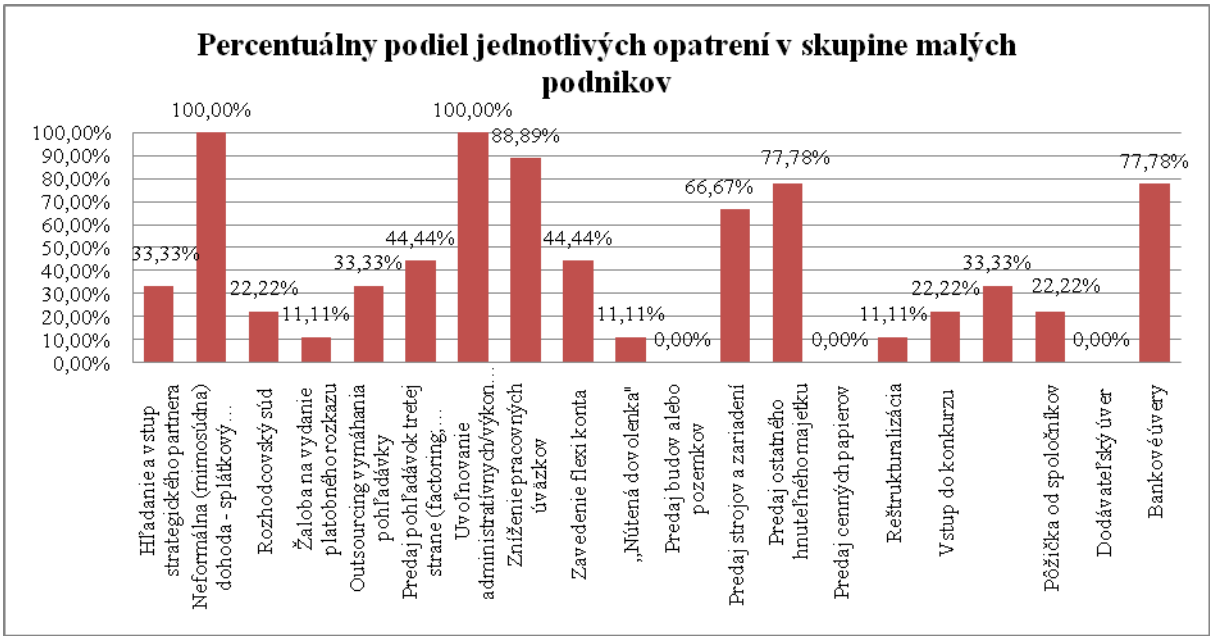
S 0 % výskytom u všetkých opýtaných predstaviteľov mikropodnikov sa môžeme stretnúť s opatreniami, ktoré sa týkajú súdnictva, napríklad vo forme podania žaloby na vydanie platobného rozkazu alebo rozhodcovského súdu. Štruktúrovaným rozhovorom sme zistili, že mikropodniky majú málo informácií o rozhodcovskom konaní a považujú tieto konania za príliš drahé. O opatrenia v podobe predaja cenných papierov prípadne dodávateľského úveru skúmané mikropodniky tiež nemajú záujem a nepovažujú ich za vhodné a významné. Jeden podnik zo skúmaného súboru mikropodnikov má pozitívnu skúsenosť s reštrukturalizáciou podniku dlžníka a so splatením jeho pohľadávky takouto formou.




Obrázok 2 Percentuálny podiel jednotlivých opatrení – mikro podniky

Prameň: Vlastné spracovanie.

Mikropodniky prijímajú opatrenia na zabránenie ich úpadku aj v podobe predaja najčastejšie nepotrebných hnuteľných vecí (autá, nepotrebný majetok), v krízových situáciách aj odpredajom strojov a zariadení a v ojedinelých prípadoch aj predajom pozemkov alebo budov. Medzi ojedinelé opatrenia mikropodnikov môžeme zaradiť aj pôžičky od spoločníkov a bankové úvery, ktoré zvyšujú podiel cudzích zdrojov v podniku. Výsledkom štruktúrovaných rozhovorov za najdôležitejšie opatrenia, ktoré kategória mikropodnikov využíva ako nástroj na zamedzenie vzniku krízových situácií vyplývajúcich z insolventnosti, môžeme považovať okrem uvoľnovania zamestnancov aj navýšenie základného imania spoločnosti a so 100 % účinnosťou sú to najmä mimosúdne dohody, kedy sa mikropodniky snažia vyriešiť zlú situáciu vlastnými silami.

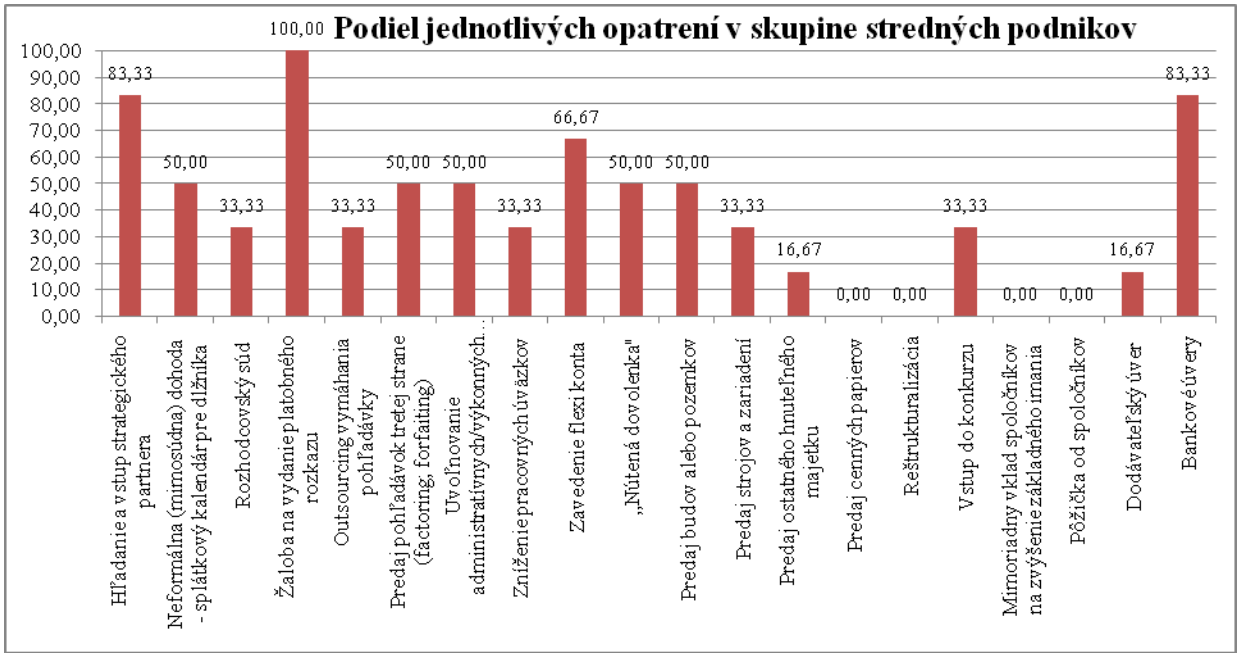



Obrázok 3 Percentuálny podiel jednotlivých opatrení – malé podniky

Prameň: Vlastné spracovanie.

Kategória malých podnikov predstavuje svojím percentuálnym zastúpením najsilnejšiu a najpočetnejšiu skupinu výberového súboru podnikov, s ktorými boli vykonané štruktúrované rozhovory s manažérmi. Medzi najvýznamnejšie opatrenia (obrázok3), ktoré malé podniky v postavení veriteľa prijímajú, patria neformálne mimosúdne dohody. Malé podniky toto opatrenie považujú za výhodné hlavne z hľadiska nízkych nákladov (podnik opatrenie vykonáva vo vlastnej réžií). Uvoľňovanie zamestnancov a zníženie pracovných úväzkov radíme medzi opatrenia, ktorými malé a mikro podniky šetria peňažné prostriedky. Spoločným opatrením mikro a malých podnikov je predaj ostatného hnuteľného majetku, no vo väčšej miere sa v malých podnikoch využíva aj opatrenie v podobe predaja strojov a zariadení v porovnaní s mikropodnikmi. Výrazný rozdiel oproti mikro podnikom sme zaznamenali najmä v zvýšenej frekvencii využívania bankových úverov malými podnikmi, na preklenutie časového nesúladu medzi úhradou faktúr a inkasom pohľadávok. Malé podniky nepripisujú významnosť opatreniu v podobe mimoriadneho vkladu spoločníkov na navýšenie základného imania v takej miere, v akej toto opatrenie bolo významné pre mikropodniky.

Malé podniky preferujú služby inkasných kancelárií v podobe outsourcingu svojich pohľadávok alebo predaj pohľadávok (faktoring forfaiting) viac než opatrenia, ktorými by sa stali subjektmi konkurzného konania alebo reštrukturalizácie. Rozhodcovský súd a žaloba na vydanie platobného rozkazu nepatria medzi obľúbené opatrenia, ktoré využívajú malé podniky a ich percentuálny výskyt a významnosť sú v porovnaní s ostatnými opatreniami veľmi nízke. Označili ich za zložité a spájajú sa s vyššou administratívnou náročnosťou a rôznymi poplatkami. Za bezvýznamné opatrenia na úrovni malých podnikov môžeme označiť predaj budov a pozemkov, predaj cenných papierov a dodávateľsky úver, ktorých percentuálny výskyt je nulový a analyzované malé podniky sa s takýmito opatreniami na zabránenie svojho úpadku v postavení veritela nestretli.



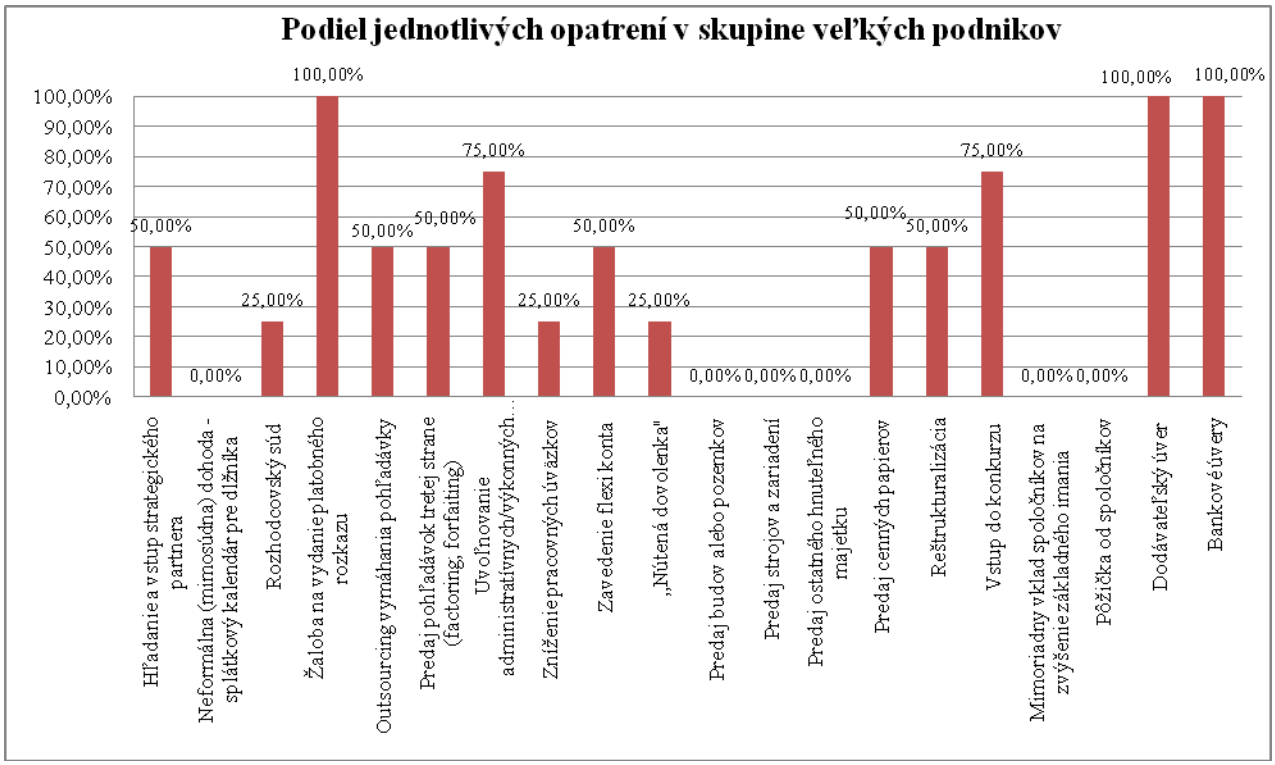

Obrázok 4 Percentuálny podiel jednotlivých opatrení – stredné podniky

Prameň: Vlastné spracovanie.

Za najvýznamnejšie opatrenie považuje 100 % všetkých analyzovaných stredných podnikov žalobu na vydanie platobného rozkazu, s ktorou má všetkých šesť podnikov pozitívnu skúsenosť a považujú ju za najlepší nástroj na to, aby od dlžníka dosiahli plnenie pohľadávky. Významnými opatreniami sú aj bankové úvery, obdobne ako u malých podnikov, z ktorých dostupnosťou analyzované podniky nemajú žiadne problémy a hľadanie a vstup strategického partnera do podnikania, čím sa diferencujú od skupiny malých podnikov. Malé podniky preferujú uvoľňovanie zamestnancov a skracovanie pracovných úväzkov, v ktorých stredné podniky dosahujú nižšie percentuálne hodnoty. Stredné podniky pred znižovaním pracovných úväzkov zamestnancov preferujú zavedenie flexikonta, ako dočasného riešenia na preklenutie rozmanitých problémov tak, ako to ilustruje obrázok 4. Opatrenie v podobe ,,nútenej dovolenky“ má v stredných podnikoch podstatné miesto v porovnaní s malými podnikmi, kde je toto opatrenie využívané minimálne.

Opatrenie vstup do konkurzných konaní začína byť významné s rastom veľkosti podnikov, pretože 33 % manažérov stredných podnikov ho považuje za relevantné opatrenie a v porovnaní s predchádzajúcimi dvoma kategóriami podnikov má toto opatrenie rastúcu tendenciu vzhľadom na rast veľkosti výberového súboru. Ani jeden z opýtaných manažérov sa vo vzorke stredných podnikov nestretol vo svojej praxi s opatreniami v podobe predaja cenných papierov, zvýšenia základného imania spoločnosti, pôžičiek od spoločníkov, a ani jeden z nich nemá skúsenosť s reštrukturalizáciou podniku dlžníka.

Veľké podniky sú dominujúce nielen z hľadiska počtu zamestnancov, ale zároveň aj z hľadiska veľkosti vytvoreného obratu, ktorý tvorí takmer 45 % z celkovej sumy obratov vytvorených všetkými veľkostnými kategóriami podnikov. Opatrenia prijaté touto kategóriou podnikov sa odlišujú od opatrení malých a mikro podnikov hlavne z dôvodu, že druhotná platobná neschopnosť pôsobí deštruktívne najmä na malé podniky. Mikro a malé podniky sú často závislé na tzv. priebežnom financovaní, teda pravidelnom a bezproblémovom finančnom toku v rámci zmluvných dodávateľsko-odberateľských vzťahov.




Obrázok 5 Percentuálny podiel jednotlivých opatrení – veľké podniky

Prameň: Vlastné spracovanie.

Medzi najvýznamnejšie opatrenia veľké podniky zaradili bankové úvery (obrázok 5), dodávateľské úvery a žalobu na vydanie platobného rozkazu. V skúmaných veľkých podnikoch sa žaloba na vydanie platobného rozkazu osvedčila ako účinné opatrenie, ktoré môže odvrátiť hroziaci sekundárny úpadok veriteľa, čo však predstavuje opak v opatreniach, ktoré boli prijaté malými podnikmi. Malé podniky niekedy existujú na hranici prežitia a aj jedna, z pohľadu veľkého podniku, bezvýznamná nezaplatená pohľadávka môže spôsobiť v malom podniku vážne problémy s tokom peňažných prostriedkov. Veľké podniky majú viac času na riešenie situácie s dlžníkom, disponujú dostatočnou kapitálovou vybavenosťou. Medzi významné a v praxi využívané opatrenia považujú analyzované veľké podniky na rozdel od ostatných skúmaných podnikov z iných veľkostných kategórií, napríklad predaj cenných papierov, ktoré pre veľké podniky predstavujú významný nástroj financovania podniku, ako aj reštrukturalizáciu podniku dlžníka. V reštrukturalizačnom konaní časť svojich oprávnení vykonávajú veritelia prostredníctvom veriteľského výboru, v súčinnosti s ktorým sa vypracuje reštrukturalizačný plán, ktorého účelom je zabezpečenie čo najvyššej miery uspokojenia veriteľov pri zachovaní a udržateľnosti podniku dlžníka.

Spoločnými opatreniami, ktoré na základe štruktúrovaných rozhovorov frekventovane využívajú aj stredné aj veľké podniky je vstup strategického partnera a služby faktoringových, forfaitingových a inkasných kancelárií. Manažéri skúmaných veľkých podnikov potvrdili, že vedenie podnikov nemalo potrebu predávať akýkoľvek hnuteľný alebo nehnuteľný majetok s výnimkou finančného majetku v podobe cenných papierov týchto spoločností, preto tieto opatrenia považujú na nepodstatné, tak ako aj potrebu navýšenia základného imania alebo opatrenie v podobe pôžičiek od spoločníkov.

## Záver

Štruktúrovanými rozhovormi s predstaviteľmi mikro a malých podnikov sme zistili, že úlohu súdov najmä v obchodných veciach nevnímajú ako rýchlu a účinnú pomoc pri presadzovaní práv veriteľov proti odporujúcej vôli dlžníka, čo môže viesť k druhotnej platobnej neschopnosti mikro a malých podnikov, v najhoršom prípade môže mať až likvidačné účinky. Podľa nášho názoru predstavitelia mikro, malých a stredných analyzovaných podnikov vnímajú konkurzné konanie veľmi negatívne, pretože ich pohľadávky nie sú uspokojené celkovo, ale iba pomerne, prevažne z dôvodu, že návrh na konkurzné konanie dlžník podáva až vtedy, keď už nemá podstatnú časť alebo žiadny majetok na uspokojenie svojich veriteľov. Predstavitelia malých a stredných podnikov negatívne hodnotia aj veľký formalizmus a administratívnu náročnosť konkurzných konaní.

Medzi opatrenia s nedostatočným významom vo výberovom súbore podnikov môžeme zaradiť aj rozhodcovské konania, ktoré viac preferujú malé a stredné podniky. Analyzované podniky vnímajú výhody rozhodcovského konania v podobe flexibility, nižších trov konania, neformálneho prístupu a postupov bez zložitých procedúr. Nevýhody analyzované podniky vidia vo vyšších nákladoch za zrýchlené rozhodcovské konanie.

Najvýznamnejšou formou opatrení pri stredných a veľkých podnikoch sú žaloby na platobný rozkaz alebo právoplatný a vykonateľný rozsudok. Veritelia takýchto podnikov sa najčastejšie obracajú na súdneho exekútora, ktorého si vyberá veriteľ. Nevýhodou exekučného konania je, že ak majetok dlžníka nie je postačujúci na úhradu trov konania exekúcie, tieto trovy znáša veriteľ. Ak je veriteľovi známe, že dlžník nemá majetok, je lepšie podať návrh na vyhlásenie konkurzu, ak sú splnené zákonné podmienky.

Ak sa však na výsledky štruktúrovaných rozhovorov s manažérmi pozeráme komplexne, za najvýznamnejšie a najpočetnejšie opatrenia analyzované podniky považujú bankové úvery na preklenutie dočasnej sekundárnej platobnej neschopnosti a uvoľňovanie administratívnych alebo výkonných zamestnancov.

## Adresa a kontaktné údaje autorov

JUDr. Tomáš Suchý
doc. JUDr. Ing. Eva Hudecová, CSc.
Univerzita Mateja Bela v Banskej Bystrici
Ekonomická fakulta
Tajovského 10
975 90 Banská Bystrica
E-mail: eva.hudecova@umb.sk

# THE EFFECTIVENESS OF LABOR OF THE PERSONNEL OF THE OIL-PRODUCING ENTERPRISE ON THE BASIS OF THE FUNCTIONAL-COST ANALYSIS

**Galina Gagarinskaia, Irina Kuznetcova, Aleksandr Gagarinskii**

**Abstract**

The questions of productivity of labor of the personnel of the oil-producing enterprise on the basis of the functional-cost analysis are considered in the article. The influence of social and labor relations on the effectiveness of staff work is analyzed, the main socioeconomic problems of increasing the effectiveness of the work activity of personnel in modern conditions are identified.

**Key Words**

Labour, personnel, enterprise, social and economic relations, functional-cost analysis.

**JEL Classification:** J59

## Introduction

Interindustry fuel and energy complex now is the aggregate of production and production of fuel and energy, their transportation, distribution and use in the economy of Russia occupies a leading position. The complex produces about 25% of Russia's industrial output, is the most important source of the country's budget, and provides about half of the foreign exchange earnings from the export of products. In the fuel and energy sector are branches of the fuel industry (oil, gas, coal, shale, peat), and electric power.

Nowadays, almost any manager in his work constantly faces the need to evaluate subordinates – for making decisions about incentives, promotion, training, and probation, changes in wages or bonuses. This task is facilitated if in the arsenal of the personnel management service there is such a tool for assessing the official duties of an employee, such as the procedure for assessing staff. Improvement of labor activity is particularly significant and specific due to a number of features of the oil industry, labor activity of workers, their professional and motivational characteristics. Inefficient labor activity is associated with a shortage of labor, inadequate skills, inadequate moral and psychological climate, lack of information on the factors of incentives, lack of young professionals.

## The impact of social and labor relations on the performance of personnel

The main goal of any enterprise is to achieve the goals that are set before them. The degree of implementation of these goals shows how effectively the enterprise operates.

In any company, in every enterprise and in its subdivision, there are both leaders and outsiders and middle peasants, therefore, employees do not fulfill their production functions unequally. However, it is necessary to have a unified system for assessing the effectiveness of the performance of official duties. Such a system increases the effectiveness of human resources management of the organization due to the following factors:

- positive impact on employees' motivation. The existence of feedback "boss-worker" favorably affects the motivation of employees, allows them to adjust their behavior in the workplace and achieve productivity gains;
- planning of professional training. Staff assessment makes it possible to identify gaps in the competences of each employee and to provide for measures to eliminate them;

- career planning. The evaluation of employee reveals their weak and strong professional qualities, which allows carefully preparing individual employee plans;
- making decisions on remuneration, promotion, dismissal. Regular and systematic assessment of employees provides the management of the organization with the information necessary to make informed decisions on increasing the discharge (ie, salary), promotion or dismissal. Remuneration of employees who manifest themselves both in work and in sports events also has a motivating effect on them and their colleagues.

The above advantages are realized when a number of additional conditions are met. First, the evaluation system and the actual evaluation of the work of employees should be objective and perceived by the staff as objective. To impart objectivity to the evaluation system, its criteria should be open and understandable to employees. Secondly, the results of the evaluation should not be made public; Are known only to the employee and the employee of the personnel management service.

It is very difficult to create an evaluation system that is characterized by precision, objectivity, simplicity and clarity, so today there are several systems of personnel evaluation, each of which has both pluses and minuses.

Issues of employee motivation are important not only for oil companies, but for all enterprises in general, because an effective employee is a highly motivated employee.

- For many workers and engineers of the oil producing enterprise, especially highly skilled workers, wages become a measure of their labor contribution due to specific conditions, harmful production and an adjacent work schedule. In the present-day conditions, the orientation toward earnings is fully justified and serves as a means of developing new needs of the individual.
- Environmental policy as a focused activity to ensure the rational use of natural resources, minimize pollution and waste and maintain the life-supporting functions of the biosphere is one of the many aspects of sustainable development, but rightfully takes priority, since it corresponds to the basic idea of sustainable development, taking into account the environmental factor in development society. The main thrust of any environmental policy is the development and implementation of the mechanism of responsibility of subjects in the environmental sphere. Compliance with the environmental component of corporate social responsibility contributes to the formation of long-term trust on the part of employees, consumers, partners, increasing the competitiveness and financial sustainability of the enterprise. Due to the specificity and harmfulness of production, environmental and social programs are being conducted, various projects and technologies are being developed aimed at introducing new environmental technologies and increasing environmental safety at production facilities.
- The company is actively working to increase production indicators, expand the resource base, create conditions for professional and personal growth of employees. After all, the success of the enterprise directly depends on people, on their attitude, satisfaction, and social well-being.
- The climate in the team also plays an important role.

  Sociological studies have shown that the optimal strength of the team in terms of maximum satisfaction of a person with their labor is 5-11 people. The size of a team of less than 5 people is undesirable due to the fact that its members may be concerned about increasing their personal responsibility for decisions.

  The efficiency and cohesion of the work collective depend to a great extent on the degree of similarity of the personalities and points of view of colleagues, the approaches they apply in solving problems.

  The norms elaborated and generally accepted in the work collective have a strong influence on the behavior of the individual and on the direction in which the team will work: to achieve the goals of the organization or to counter them.

  The cohesion of the work collective reflects a certain degree of integration of workers, based on a community of interests. At the same time, it is necessary to take into account the negative aspects of a high degree of cohesion, when there is an "unanimity" effect. In this case, an individual worker, in order not to violate the harmony of the collective, avoids manifesting his disagreement with him. Training of employees and their personal and professional development play a big role in motivating employees. At the enterprise it is necessary to conduct training not only in the professional sphere and the field of labor protection, but also in the field of psychology,

which can give employees motivation, and managers – new methods in the field of personnel management.

Thus, we can distinguish four factors affecting the result of labor in an oil producing enterprise: socio-psychological, production, technical-economic, environmental.

High staff motivation is the most important condition for the success of the organization. No company can succeed without the mood of employees to work with high returns, without the interest of the members of the organization in the final results and without their desire to contribute to the achievement of the set goals. That is why the interest of managers and researchers involved in management is so high that they study the reasons that force people to work with full force in the interests of the organization. And although it cannot be said that the results achieved and the behavior of employees are determined only by their motivation, the value of motivation is very high.

The inner mood of a person shows how much he is interested in the successful completion and completion of his work.

At the beginning of the century, for the overwhelming majority of leaders, the answer was obvious: money is the main incentive for a person to work. And today many leaders adhere to this point of view. Although it is known that in some cases a person can selflessly work, even if his salary is clearly not satisfactory. On the other hand, for some work, many people will not take up any money. Hence, in labor motivation, which determines both the choice of a place of work, and the attitude to work, there is something other than money, and sometimes even more powerful than money.

The motivation of the employee depends on the degree of satisfaction of his/her needs. If the employee receives from his activities all that he needs, then the inner spirit of his, respectively, will be high.

Motivation is an internal state of a person connected with needs, which activates, stimulates and directs its actions towards the set goal. The most important thing in this definition is that motivation stimulates activity. Accordingly, through motivation, the satisfaction of the needs of individual is realized.

Now it is necessary to consider the components of a person's motivation.

The main thing in motivation is its inseparable connection with the needs of a person. A person seeks to reduce tension, expressed in the state of anxiety and anxiety that arises in him when he feels the need (not always realized) to satisfy any need (biological or social).

It is very important to note that motivation makes the behavior of a person purposeful, and the achievement of the goal leads to a decrease or loss of tension.

The attitude of a person to the job, to his/her work, is an important factor in the interaction of personnel in the organization and increasing production efficiency.

The main criterion affecting the manifestation of the worker's attitude to work is motivation, which is a combination of external and internal driving forces.

## The basic social and economic problems of increasing the effectiveness of the work activity of personnel in modern conditions:

- the external environment in which the enterprise is located and which have a significant impact on its condition;
- alienation of labor, leading to a weakening of motivation for productive and quality work and, as a result, to a decrease in labor activity;
- the crisis of the trade union movement, which consists in the relative and absolute reduction of trade unions, in the difficulty of finding the right guidelines in the social dialogue with entrepreneurs and the state;
- attitudes towards work activity, manifested in labor behavior and social activity of the individual;
- the problematic part of the social and labor sphere is occupational safety, which is now receiving much attention;

- problems of improving the moral and material incentives for labor activity, consisting in the absence of a clear criteria base covering the entire population of the country, and lack of information;
- the formation of an effective national social insurance system, including by increasing the income of the population as a result of the growth of its labor activity

## Research of the system of personnel labor efficiency at oil-producing enterprises of the Russian Federation

The entry of the Russian economy into the innovative and strategic path of development entails the need to master modern methods and management tools aimed at identifying and making use of the internal potential of each particular enterprise, taking into account the specifics of its activities. The enterprises of the oil industry face a complex of complex problems related to the management of their activities.

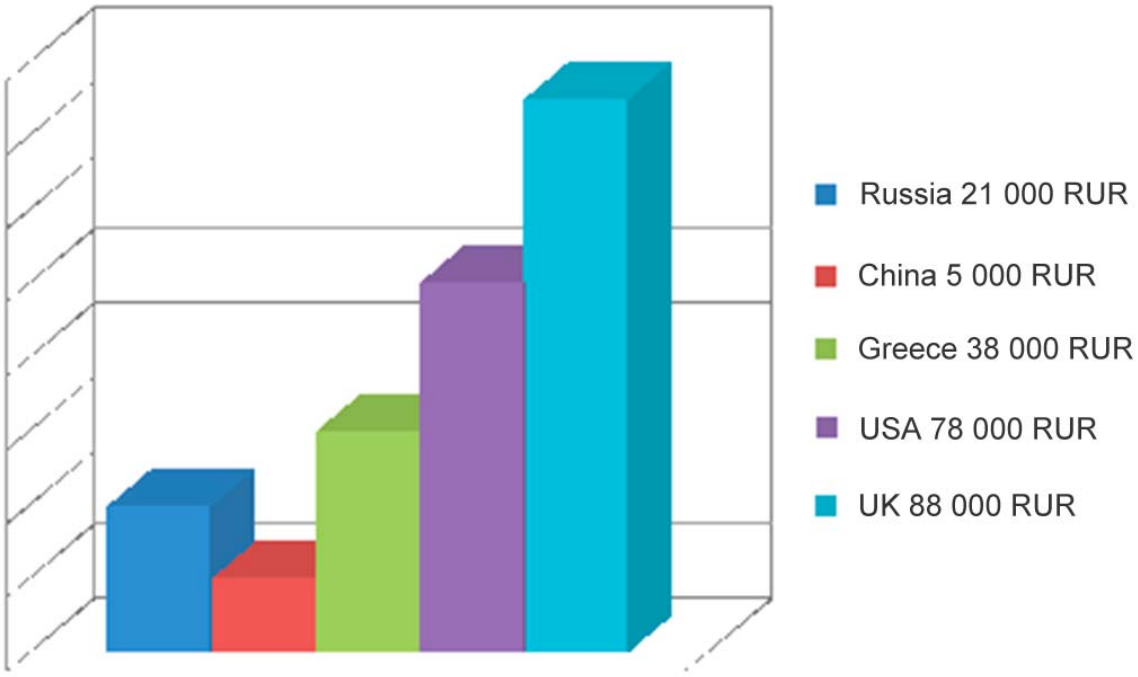
Russian oil companies rated by Forbes Global 2000 are among the top 10 oil and gas companies in the world (Fig. 1).

Figure 1: Top-10 of the world's oil and gas companies rated by Forbes Global 2000 ($, bln)

| № in the world | Company | Location | Proceeds | Profit | Assets | Market price | Number of employees |
|---|---|---|---|---|---|---|---|
| 1 | Sinopec | PRC, Beijing | 427,6 | 7,7 | 233,9 | 121,0 | 358,6 |
| 2 | Royal Dutch Shell | The Netherlands, Hague | 420,4 | 14,9 | 353,1 | 195,4 | 94,0 |
| 3 | ExxonMobil | United States, Irving | 376,2 | 32,5 | 349,5 | 357,1 | 83,7 |
| 4 | BP | UK, London | 352,8 | 3,5 | 284,3 | 120,8 | 84,5 |
| 5 | PetroChina | PRC, Beijing | 333,4 | 17,4 | 387,7 | 334,6 | 534,6 |
| 6 | Chevron | United States, San Ramon | 191,8 | 19,2 | 266,0 | 201,0 | 64,7 |
| 7 | Gazprom | Russia, Moscow | 158,0 | 24,1 | 356,0 | 62,5 | 422,8 |
| 8 | Valero Energy | San Antonio, USA | 130,8 | 3,6 | 45,6 | 30,6 | 10,1 |
| 9 | Rosneft | Russia, Moscow | 129,0 | 9,0 | 150,0 | 51,1 | 48,3 |
| 10 | Lukoil | Russia, Moscow | 121,4 | 4,7 | 111,8 | 43,5 | — |
| 11 | JX Holdings | Japan, Tokyo | 111,0 | -1,5 | 65,6 | 9,7 | 26,6 |
| 12 | Statoil | Norway, Stavanger | 95,1 | 3,5 | 131,6 | 58,0 | 22,5 |

Statistics on average wages in various countries of the world are shown in the diagram in Fig. 2.

Figure 2: Average salaries in the world




The problem of the further development of the oil-extracting industry is connected with the decision of a difficult problem – an estimation of results of labor activity of the personnel of the enterprise. At present, many managers of large oil industry enterprises underestimate the importance of methods of managing personnel and stimulating the labor activity of workers actively used abroad. As a result, the evaluation of the results of staff labor in practice is reduced to attestation. Given the current economic situation and high competition in the fuel and energy market, the primary task for the enterprise in this sector is not only to increase production, increase production and quality of products, improve the quality of working life for workers, but also to continuously solve innovative tasks in the management of the enterprise. At the present stage, special attention should be paid to the development of a system for managing the work of personnel, which plays a key role in improving the efficiency of work in the organization.

Inefficient labor activity can be associated with inadequate skill level, unsatisfactory moral and psychological climate, lack of information on the factors of incentives, lack of young specialists.

The way out of this situation is proposed in the methodological scheme presented in Table 1.

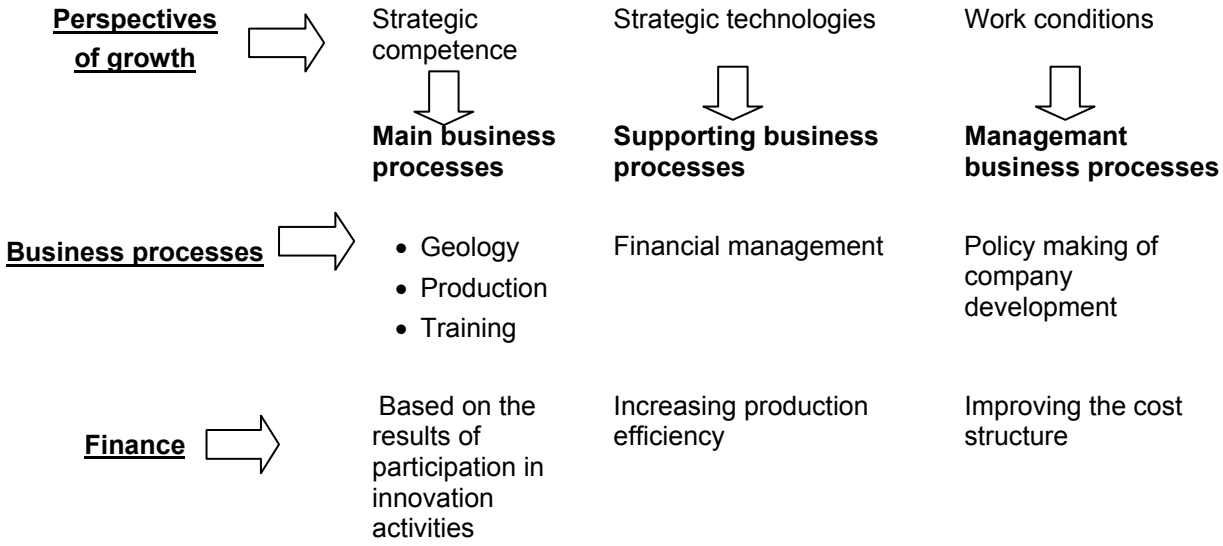
Table 1: General Methodological Framework for Personnel Management

| | | |
|---|---|---|
| Measurement and assessment | • Measurement and assessment of existing indicators of financial and economic activity of the enterprise. Planning the desired resultant performance of the enterprise<br>• Determination and calculation of limited material and financial resources | • Monthly report on the previous month and work plan for the next month<br>• Quarterly technical and economic indicators |
| Planning | • Development of a balanced system of scorecards<br>• Planning productivity growth<br>• Planning activities to achieve a given level of productivity | • Career planning and development of young engineering staff<br>• Practical training of operating personnel of hazardous production facilities, implementation of the Program approved by the company's management of equipping the training and educational base of the company |
| Arrangement | • Implementation of planned activities<br>• Familiarization of personnel with the growth strategies of labor productivity | • Realization of the plan for work with the personnel reserve<br>• Reorganization<br>• Development of a draft standard structure<br>• Changing the staffing table |
| Stimulation | • Improvement of the payroll algorithm<br>• Improvement of labor rationing<br>• Development of a system of additional payments for achieving the planned level of labor productivity | • Regular meetings of the management of the Company's personnel and social unit<br>• Social support for large and poor families of workers<br>• Conducting conferences for young professionals<br>• Contest "Best in the profession" |
| Control | • Evaluation, analysis of the results obtained to increase labor productivity<br>• Bonus for achieving the result of increased productivity | • Within the framework of the "Plan for strengthening control and automation in the field of personnel management, calculation of wages and social development approved by the company, SAP"<br>• Implementation of various stages of production control |

Of particular importance are the issues of resource management, the solution of which makes it possible to make full use of the available labor potential and, thus, to ensure the social and economic efficiency of any production.

## Formation of management recommendations depending on sectoral factors (Fig. 3)

Figure 3: Model of the system of stimulating the results of labor activity




In the course of the study, a model of a system for stimulating labor managers' performance in oil producing enterprises was developed, based on the application of KPI-related indicators that are interrelated in levels of management and ensuring an objective evaluation of labor outcomes (Table 2).

The proposed model of the incentive system is based on the use of developed indicators KPI, which, in turn, take into account the results of work at three levels of management – corporate, operational, linear.

## Functional-cost analysis of the interrelationships of the personnel directorate with other functional divisions of the enterprise

O – is responsible for the performance of this function, organizes its use, prepares and prepares the necessary documentation; П – represents the initial data, the information necessary for the performance of this function; Y – participates in the performance of this function, visits the prepared document; C – coordinates the prepared document on the function; P – makes a decision, approves, signs the document.

Table 2: Scheme of functional interrelationships of the HR specialist with other functional divisions of the enterprise

| № | Functioning | Functional units | | | | |
|---|---|---|---|---|---|---|
| | | Occupational safety engineer | HR officer | Documentary support officer | HR head | General director |
| 1 | Execution of orders | П | Р | О | С | Р |
| 2 | Implementation of work on the acceptance of applications | - | О | О | Р | Р |
| 3 | Maintenance of the time sheet | П | О | П | Р, С | Р |
| 4 | Documentary keeping | - | - | О | - | Р |
| 5 | Schedule of holidays | - | Y | О | С, Р | Р |
| 6 | Organization of training, retraining and advanced training of personnel | Y | - | - | С | Р |
| 7 | Familiarization of employees for signing with the rules of internal labor regulations, labor contracts and amendments to them | П | П | П | С, Р | Р |
| 8 | Accounting, filling in the sheets of incapacity for work | - | О | О | С | Р |
| 9 | Control over the implementation of the holiday schedule | - | О | Y | Р | Р |
| 10 | Compliance with the schedule of documental workflow on time | - | - | О | О | Р |
| 11 | Document Return Control | - | - | О | Р | - |

An expert group was established to determine the significance of the functions of the personnel management. It consists of the head of HR, heads and specialists of departments. Each of the members of the expert group filled in two matrices of pairwise comparison of functions, separately analyzing the main, and separately – auxiliary functions.

## Conclusion

There is a need to improve the methods and tools for managing labor resources, taking into account the age specificity of each category of workers, including the conceptual apparatus of the

labor economy in the appendix to the search for new mechanisms for solving social and labor problems and assessing the results of innovations in the social and labor sphere.

These data actualize the problem of the formation and improvement of labor resources management mechanisms through innovations in the social and labor sphere, chosen by the author for research.

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**Address and contact information of the authors**

**Galina P. Gagarinskaia Dr. of Economics, professor**

Chair of the Dept. “Economics and management of Organization”

Samara State Technical University

244 Molodogvardeiskaia ul. 443100, Samara, Russia

phone: +7 846 278 43 81

E-mail: eyo080505@mail.ru

**Irina G. Kuznetcova PhD in Economics, Associate professor**

Dept. “Economics and management of Organization”

Samara State Technical University

244 Molodogvardeiskaia ul. 443100, Samara, Russia

phone: +7 846 278 43 81

E-mail: irenekuz@yandex.ru

**Aleksandr V. Gagarinskii, Associate professor**

Dept. “Economics and management of Organization”

Samara State Technical University

244 Molodogvardeiskaia ul. 443100, Samara, Russia

phone: +7 846 278 43 81

E-mail: eyo080505@mail.ru

# THE INVOLVEMENT OF THE INSTITUTIONAL COMPONENT OF THE NORM IN THE TAX ADMINISTRATION

**M. C. Aristarkhova,A.Y.Perevezentseva, M.S. Zueva, O.C. Zueva**

**Abstract**

The article examines the system of tax administration as a set of norms that determine its operation. The aim of this work is to study the possibility of using the institutional concept of the "norm" in the system of functioning of tax administration. Accordingly, the consideration allocated the following tasks: definition of the specificity and structure of the General rule of tax ad-ministration;research of the role of each element of the norms in the system of functioning of tax administration;substantiation of possibility of the emergence of specific norms in the system of functioning of tax administration at a certain concretization of the content of each element and their combination.

**Key Words**

taxes, tax system, tax administration, norm, structure of norm, types of norms, attribute, factor of prescription, purpose, conditions, sanctions

**JEL Classification:**C44, J24, M53

**Introduction**

The article examines the system of tax administration as a set of norms that determine its operation. The aim of this work is to study the possibility of using the institutional concept of the "norm" in the system of functioning of tax administration. Accordingly, the consideration allocated the following tasks:

- definition of the specificity and structure of the General rule of tax ad-ministration;
- research of the role of each element of the norms in the system of functioning of tax administration;
- substantiation of possibility of the emergence of specific norms in the system of functioning of tax administration at a certain concretization of the content of each element and their combination.

The research used methods of analysis and synthesis, and abstraction and idealization, which gives the possibility of obtaining the desired result. By results of work achieved justification for the existence of the basic norm of tax administration, which could be considered as the rule of its functioning in the institutional environment. Highlighting the three subspecies of this provision in the context of the achievability of the utility (the norm of utilitarianism), the relationship between the subjects of the order (the norm of confidence) and legality (the norm of legalism). For each subspecies selected, justified and documented their structural elements that work together with the basic norm to consider the system of tax administration from an institutional point.

## 1 The involvement of the institutional component of the norm in the tax administration

In modern conditions it is recognized that the system of the state tax administration is a set of actions of the state authorized bodies on management of the tax process in the framework of the existing state of economic policy between the participants of tax legal relations, including functions of tax collection, fiscal control and prosecution of tax fraud perpetrators, accounting and work with taxpayers (Kuklina, 2009), that is, the peculiar institution, with its parties and the characteristics of existence.In the institutional environment, the main element is the norm.

Note that any institutional environment can be considered as a set of norms (rules) that determine its functioning. From this point of view, tax administration is no exception.

Because of the complexity and sophistication of tax administration system the norm should not be viewed as a limiter of some indicators of its existence, and as part of the institutional environment in which the subject makes its choice. The norm is to have a certain structure and different composition of elements in describing different areas of functioning of public procurement. Such elements include:

- attributes;
- factors of prescription;
- purpose;
- the conditions, under which there is a norm;
- sanctions.

The attributes define the group of subjects covered by the norm. Tax administration is a multi-subject system, however, it is possible to single out the main participants, which are the basis of its existence, as such, namely the participants that exercise management, that is, the state authorized bodies (first of all, the Federal Tax Service of Russia, the Administration of the Federal Tax Service of the Russian Federation for subjects, territorial units of the Federal Tax Service of Russia, as well as other state authorized bodies: state extra-budgetary funds, customs, migration services, etc.), external participants, on which management activities are directed (usually taxpayers natural persons and legal entities), as well as auxiliary participants (companies engaged in tax consulting). It should be noted that tax advisers may be called individual institution in the system of tax administration (Artemenko, 2011) because they rep-resented an independent element in the relationship of "tax authorities and the tax-payer" and perform a consulting function, which can be applied by tax authorities and taxpayers.

Factors of prescription should serve as guides to the functioning of the tax administration system; they limit and at the same time specify describe the duties and capabilities of the system, reglamentary actions of subjects, not allowing them to deviate from the planned ultimate goal of the system.

Common factors of prescription are:

1) obedience to the established tax and financial laws of the country;
2) observance of objectivity, that is, the non-application of discriminatory measures in relation to taxpayers in the process of tax administration (lack of bias, ensuring the rights of taxpayers, respect for their honor and dignity);
3) using standardized techniques, methods and instruments of tax administration on the territory of the Russian Federation;
4) control over observance of the legislation of Russia and other regulatory legal acts in the sphere of taxes and fees, monitoring timeliness and completeness of tax revenues on the entire territory of the Russian Federation.

The goal is the perfect result of the system, a benchmark and something to aspire to subjects (attributes) of norm in the performance of its obligations and opportunities. In a broad sense, the goal of the tax administration system – ensuring effective interaction among all participants in the system, which maximizes the tax revenues flowing into the budget at the minimum level of control. In a narrow sense, tax administration is pursuing a variety of goals, which can be divided into three main areas:

1) legal – compliance with tax legislation and bringing to responsibility for tax offence;
2) management – implementation management process, which is per-formed by the tax control;
3) financial – ensuring completeness of collection of tax payments to the state budget.

The conditions of the action of the norm represent "bread crumbs" – variation of conditions of functioning of the system, within which can be achieved the ultimate goal.

The main condition for the existence of the tax administration system in the modern world is its operation based on the principles of the tax system as a whole, subject to the relations and rules prevailing within it. However, one can say that tax administration is the tax system, it is impossible. As it is impossible to say that tax administration is tax control in its purest form. Although, often, some authors identify these two concepts that, in our opinion, is fundamentally wrong. Tax control acts as a subsystem in a vast and extensive system of tax administration and is a kind engine, prejudicial to

tactical aims and objectives of the tax authorities, including tax compliance, check of correctness of calculation of taxes and other liabilities governmental payment, check the quality of production and accounting of objects of taxation, ensuring timely and full entering into thebudget of amounts of taxes payable (Artemenko, 2009).

With this control it is difficult to imagine without one element of norm, which converts it in a rule, is sanctions.

Sanctions – a penalty for non-performance or non-proper performance of obligations by the parties arising relations. They are moral and legal constraints de-signed to stop the illegal behavior of entities in the system and to maintain its equilibrium. Sanctions are a kind of limit of normal, a deterrent, not giving her to "grow outwards". At the same time, too strict punishment can have negative consequences: not wanting to be subject to sanctions subjects of the norm begin to develop new factors of prescription and the conditions for the existence of the norm, with the result that the old rule into a new norm, which has not "acquired" limitations. On the other hand, mild sanctions do not provide sufficient control – the norm becomes unmanageable, unstable, too many branches (added extra, but not prohibited, attributes, factors of prescription, conditions). All this leads to the insolvency of the norm, its inability to regulate the processes inside of it.

Thus, it is necessary to ensure that the punishment meets the rule condition: provided the most effective operation standards, limit and restrain it to those limits, which would give her a stable to exist.

In the framework of the tax administration is provided, as a rule, monetary sanctions – fines and penalties for taxpayers (administrative responsibility). However, there are criminal penalties for tax evasion (Art. 198 and 199 of the criminal code of Russia, the penalties for nonpayment of taxes for natural person and legal entity respectively). Also, sanctions may be assigned scheduled and unscheduled inspections of taxpayers who systematically violate the tax law.

The general structure of the norm of the system of tax administration is presented in figure 1.

The provision within the tax administration can be viewed from several sides:

- from the utility;
- from the relations between subjects;
- from the legality.

The norm of utilitarianism expresses the desire to obtain the utility adopts a simple and complex shapes. The first assesses the desire of the subject to maximize the utility separate from their productive activities. The second – on the basis of its productive activities.

From the point of view of the tax administration system this kind of norm is manifested in the desire by the authorized government bodies to the budgets of the respective levels of the largest amount of tax payments, it is most effectively to organize and conduct their activities in such a way that the costs of tax administration were below the results in absolute monetary and relative valuation. The taxpayer, on the other hand, strives to minimize their tax liabilities, resorting to the tools of tax optimization and turning (and sometimes illegal) to tax consultants developing the strategy of the tax behavior of the taxpayer in a particular financial situation. How-ever, by carrying out control procedures with the tax authorities and the taxpayer reach an optimal tax burden maximizes the usefulness of the state and the taxpayer at the point of intersection of aggregate benefits.

The more harmonious work of all system elements, the greater utility is achieved. That is why we must strive to strengthen the system as a whole by excluding from it "loosening" factors such as bureaucratic delays, corruption, etc.

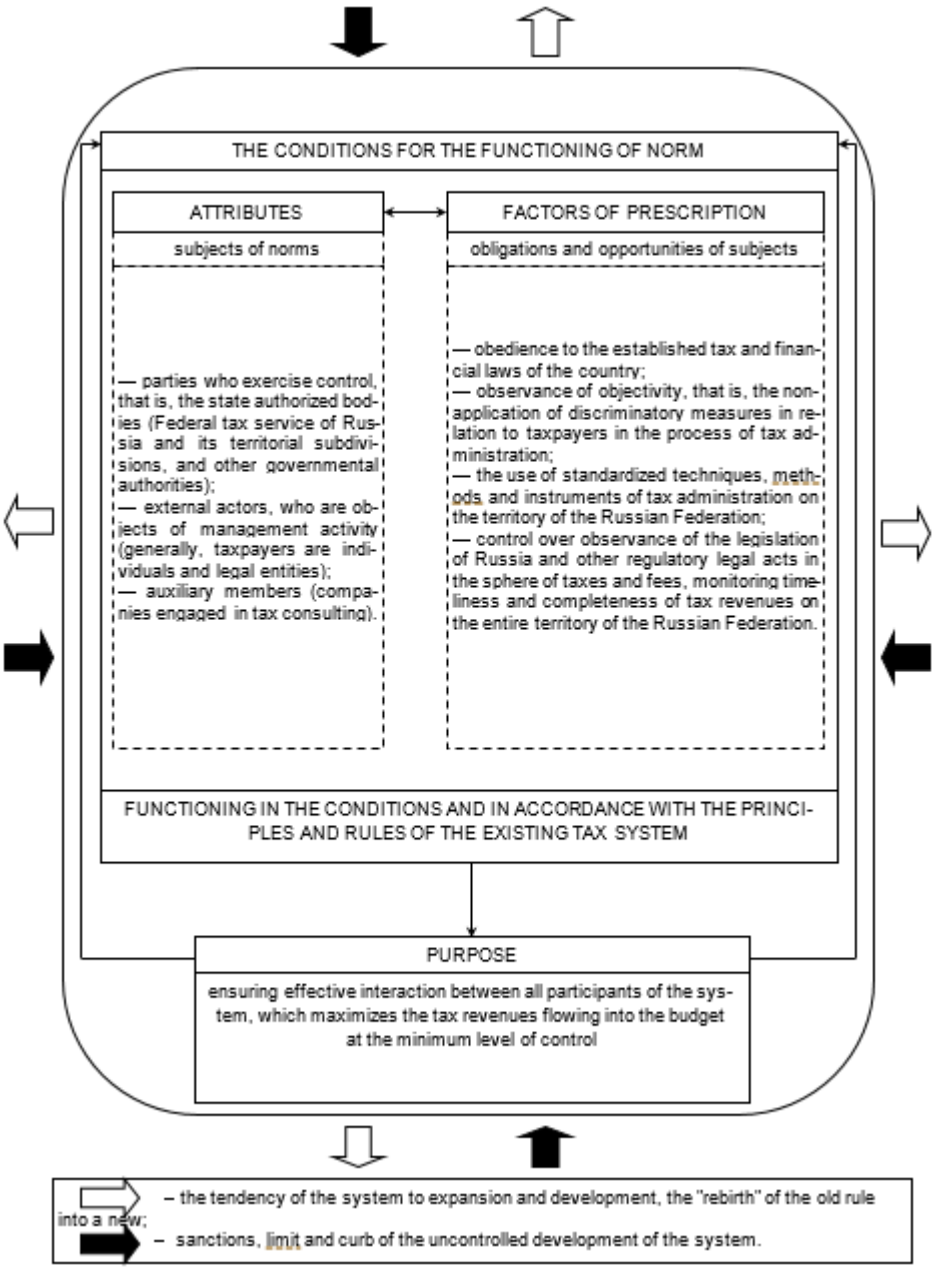


*Figure 1. The general structure of the rule system of tax administration*

These features are reflected in the structure of the norm of utilitarianism, which is presented in figure 2.

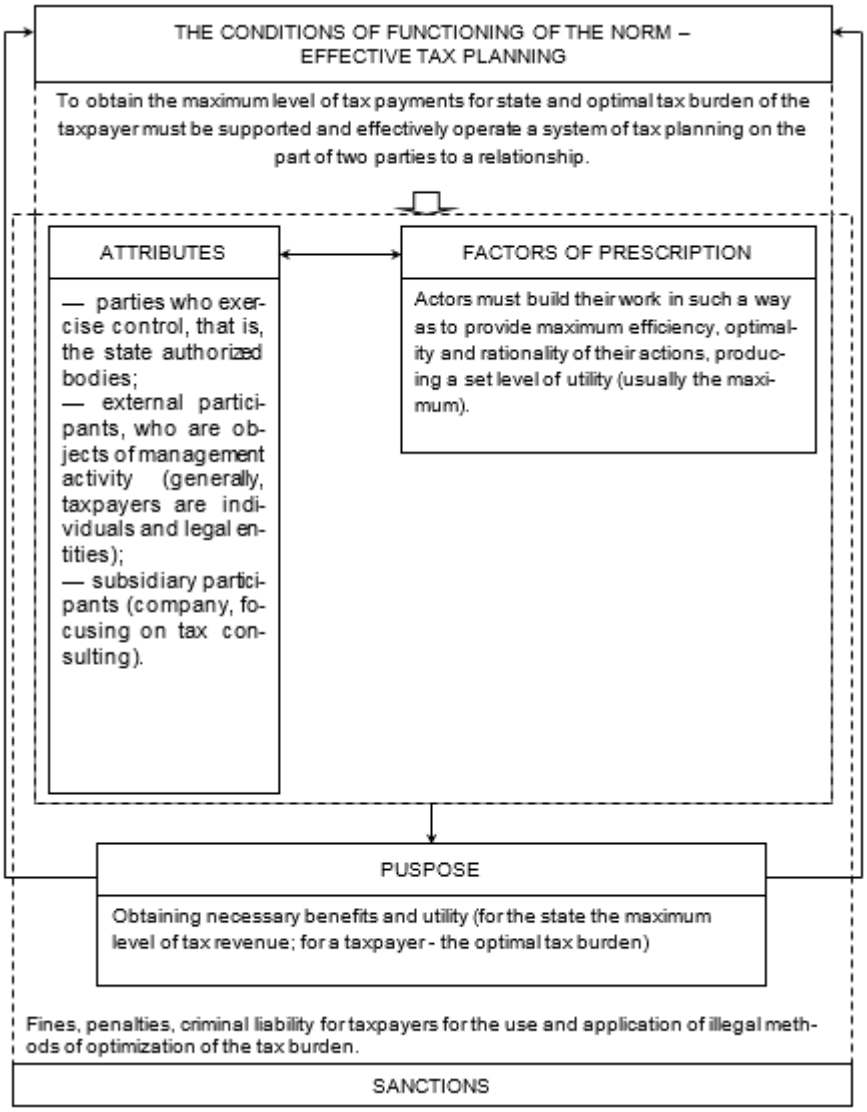


*Figure 2. The structure of the norm of utilitarianism in the framework of tax administration.*

The norm of trust governs the relationship between the subjects, the expectations of certain actions of others that affect terms according to their own economic interests to choose before will be known by their actions.

As a rule, this norm is manifested during the interaction of the interests of the state and of the individual in the sphere of tax relations. This interaction takes place in different modules, which combine to form an integral and inseparable tax relations.

1. The module of society

   From the state in the face of tax bodies and other authorized bodies, interaction with the taxpayer is using a tax policy which ensures a balance of interests in different spheres of life.

   From the taxpayer's interaction with government is carried out through participation in various civil society institutions, including through the development of recommendations and proposals on improving tax legislation and control over efficiency of expenditure of budgetary funds.

2. The module of organizational and production units

   From the state – development of the most efficient and equitable tax legislation, supported by institutionally structured and functioning system of control over its implementation, including in terms of correctness of calculation, completeness and timeliness of entering the corporate sector

(organizations and individual entrepreneurs) tax payments to the budget system of the Russian Federation, and also in part of the fulfillment of duties of tax agents.

From the taxpayers – participation in the activities of the business community leading to initiatives to introduce tax benefits for certain types of activities, preferential tax regimes in certain areas and lobbying of corporate interests in the taxation.

3. The module of the individual

From the state – encouraging voluntary payment of taxes by strengthening the productive role of the state, improving the quality of universal public goods (in-crease in level of education, health, public security, etc.), implementation of socially just taxation.

On the part of taxpayers – implementation of their economic, social, political, cultural and other Interests through the voluntary payment of their tax liabilities.

Interaction between modules is presented in figure 3.

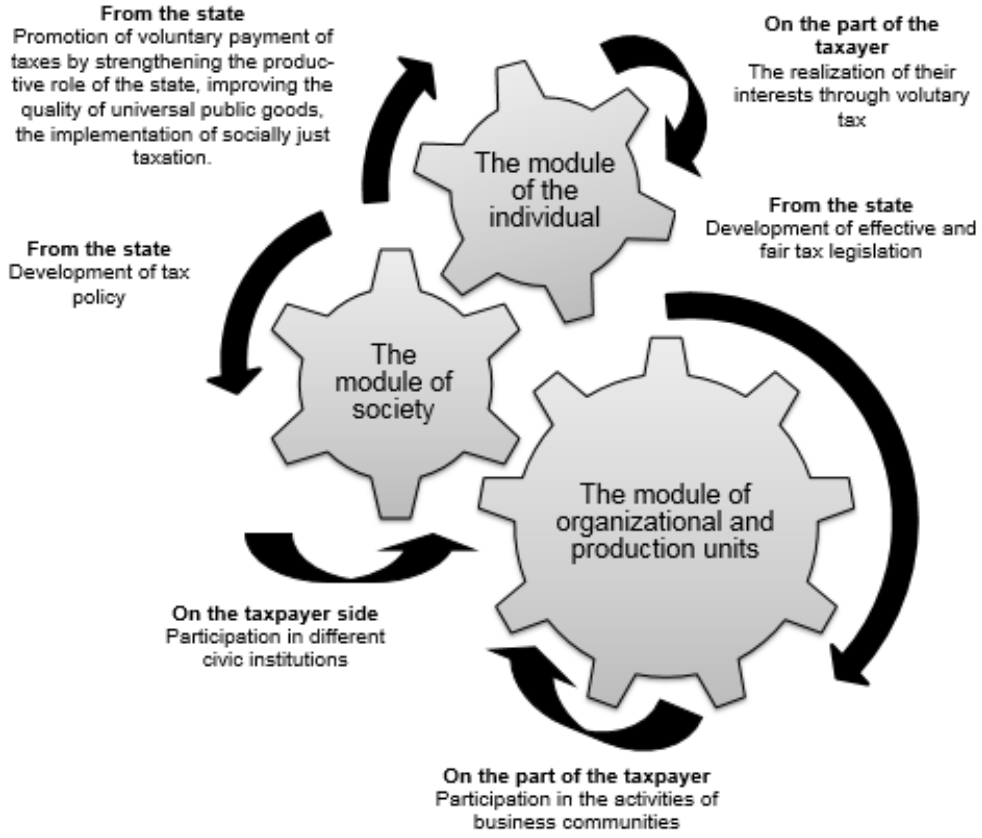


*Figure 3. The modules of interaction between the state and the taxpayer in tax relations*

The norm of trust is important for the formation of stable relationships be-tween the parties to the tax administration, which consists not only in relation to each other state and the taxpayer, but in a favorable psychological atmosphere at every stage of cooperation in the framework of tax relations, it is therefore important to improve the level of legal consciousness and the taxpayers to create tax culture. All this will eventually lead to the establishment of public control over activity of public authorities on management of state budget funds mechanism of public support for state efforts to improve the fiscal sphere and the formation of a unified system of state financial control. That, in turn, will be the act-to promote the formation of an effective tax system that would provide not only revenues to the budget, but the free development of the economy (Filatova, 2012).

The structure of the norm of trust is shown in figure 4.

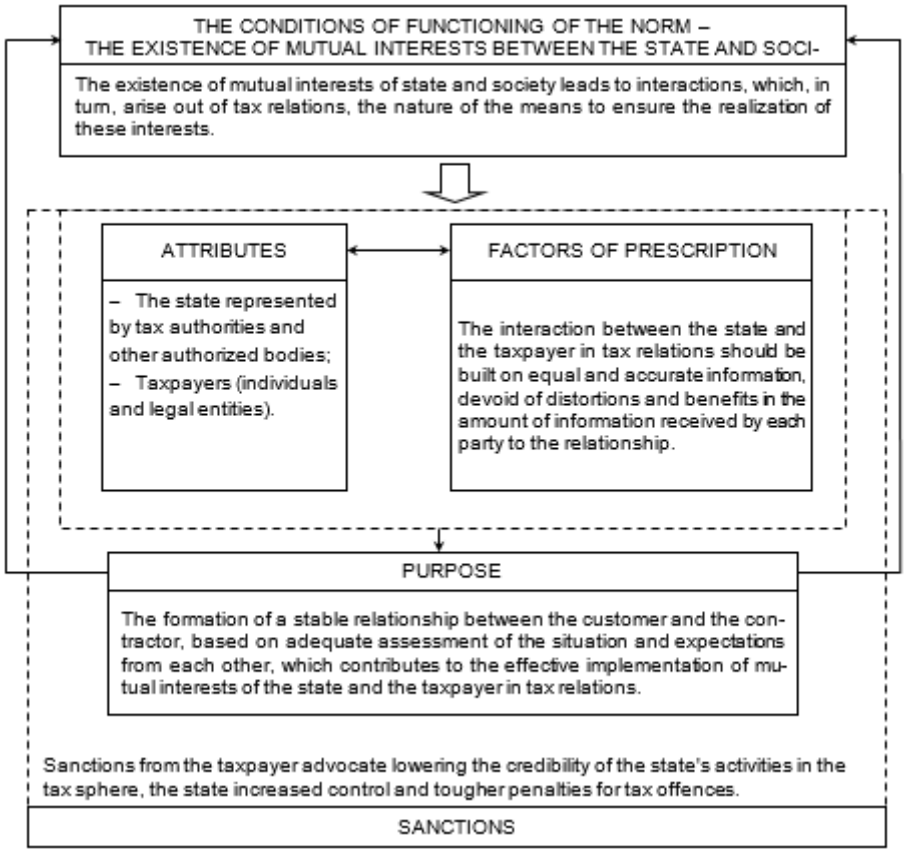


*Figure 4. The structure of the norm of trust in the tax administration*

The norm of legalism reflects respect for the law and willing to obey them. Legalism is important from the point of view of meeting the obligations towards the state, respect for property rights is a prerequisite of mutual understanding of economic interests and the intentions of the participants of economic relations. However, in the system of tax administration, where the state is one of the parties of tax relations, it is a "designer" set of laws, regulatory legal acts and other documents that form a common and unified tax legislation.

The norm of legalism is the most extensive in composition of attributes, which in addition to the main actors – the state and the taxpayer, joined by other members, fully supporting the system of tax administration and based its activities on "the arm of the law":

1) the federal, regional and local authorities are authorized to exercise normative-legal regulation in the sphere of tax relations;
2) natural persons and legal entities, and enterprises carrying out public control;
3) the authorized bodies and organizations of experts which carry out in-teraction with the tax authorities within the tax administration;
4) companies involved in tax consulting;
5) information systems, centers of the data arrays involved in the pro-cessing of information received from taxpayers and other state and non-state bodies within the framework of information exchange;
6) centers for training and retraining specialists in the sphere of taxes and taxation.

It is important to understand that legalism is not desire to blindly obey the law, and voluntarily to follow it, that is, the laws under the action of the will of the participants may change and take new forms, providing the greatest stability to the system.

Ineffective laws, insufficiently regulating and controlling the activities of the system elements, as a rule, are loopholes for dishonest taxpayers and a "seed" for germination of corruption, bureaucracy and other illegal activities. Therefore, for the existence of the norm of legalism requires a special environment – environment the absolute efficiency of the legislation: the lack of laws that contradict each other, "regulatory holes" of the skewness of the law, expressed in the restriction of the rights of certain groups of participants and self-will of others, and excessive frag-mentation sharply focused normative acts, which results in a jumble of legal rules are often unclear and, most importantly, unnecessary for the system members.

In this environment, the legalism reaches its main goal – providing complete voluntary adherence to the law, which, in turn, helps the system to develop harmoniously and effectively, preventing the dangerous condition and negative trends.

The containment system within the norms of legalism only happens with sanctions, legal limitations prescribed by legal acts.

The main normative-legal act regulating the issues related to tax offences, is the tax code of Russia. Tax offences and liability for committing them section VI is devoted to the tax code of Russia.

The tax code is not the only source, which fixed the liability for tax offenses, also to the sources could be considered criminal code of the Russian Federation.

Objectively, there is a differentiation in the manifestations and consequences of wrongful actions (omissions) in the tax field have led their division on tax crimes for which criminal liability, and tax offences entailing administrative liability. Regulation of various types of responsibility for the commission of wrongful acts due to their diverse nature.

The tax code distinguishes between the degree of culpability of taxpayers for tax violations. So, the wrongful act may be committed intentionally or negligently. A tax offence is considered committed intentionally if the person who committed it realized the wrongful nature of his actions (inactions), wished or consciously allowed the onset of harmful consequences of such actions (inactions). A tax offence is considered committed through negligence if the perpetrator were not aware of the illegal nature of his actions (inaction) or harmful nature of the consequences arising from these actions (inaction), although it should and could be aware of it.

Article 114 of the tax code, the tax sanction is a measure of responsibility for committing a tax offence. Tax sanctions are established in the form of monetary penalties (fines) Chapter 16 of Russian tax code.

If the taxpayer has made two or more tax violations, tax sanctions shall be imposed for each offence (Tax offenses and responsibility for their commission, 2017).

Thus, we can say that the norm of legalism in its manifestation ensures the functioning of the tax administration system from the point of view of legality and subordination to the law of its elements. The legalism is the driving force behind the development of the laws because under the influence of actors seeking to operate in the absolute legality, inefficient laws are abolished, and their place is taken by new, the most effective and optimal.

In general, the structure of the norm of legalism is depicted in figure 5.

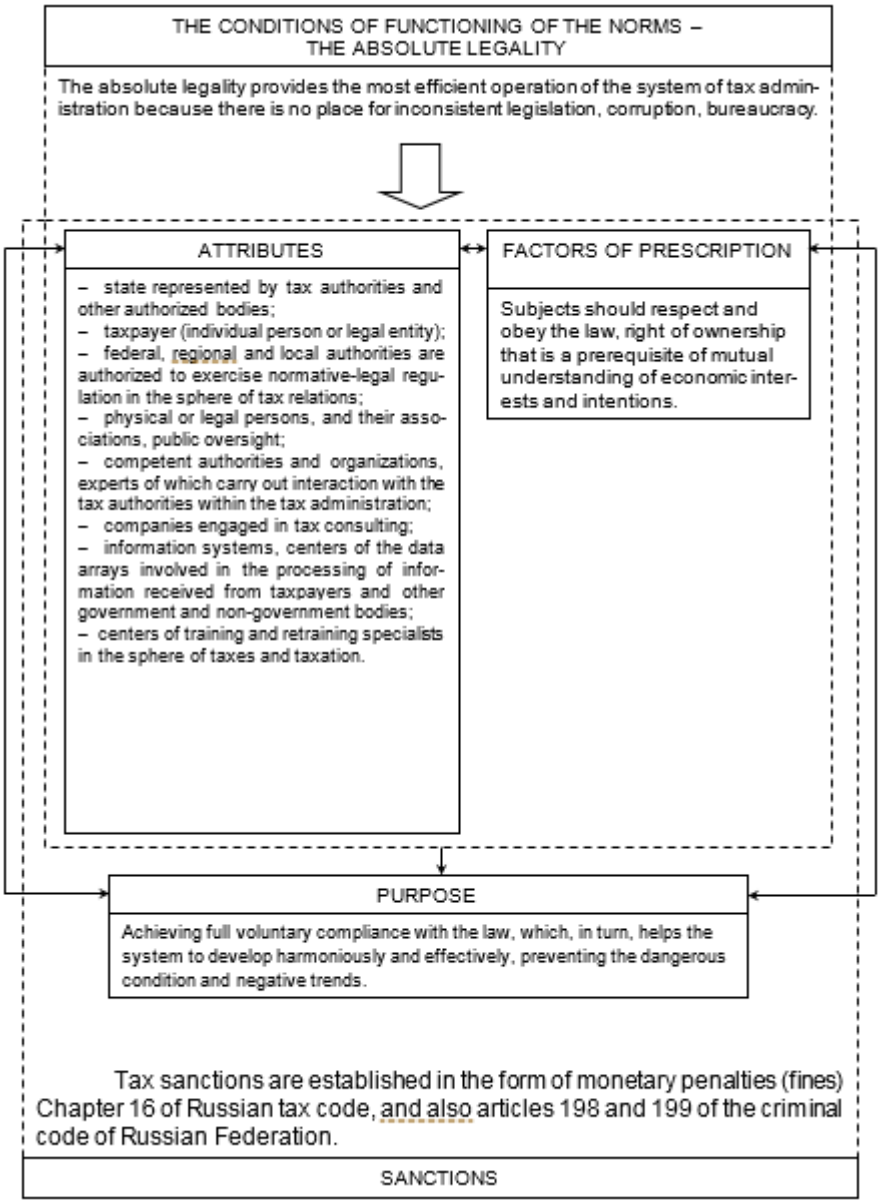


*Figure 5. The structure of the norm of legalism*

## Conclusion

Based on the foregoing, it is possible to speak about necessity of observance of these norms in tax administration, since they allow to maintain the functioning of the system in a stable condition and at the same time giving enough freedom to change, at the same time suppressing uncontrolled "growth" of the system and stop-ping the negative trends of development.

It should be noted that the expression of selected subtypes of the general norm of tax administration is possible not only in absolute terms – a pure form, but in various combinations with each other, due to the multiplicity of directions of tax administration in General, and the variety of goals and tasks facing the system of tax administration in particular.

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## Adress and Contact authors


Аристархова Маргарита Константиновна, доктор эк. наук, профессор
Уфимский государственный авиационный технический университет
Россия, Республика Башкортостан, г. Уфа, ул. К.Маркса,12
450000
Тел.: +7-347-273-79-56
E-mail: ninufa@mail.ru

Зуева Ольга Константиновна, кандидат эк. наук, доцент
Уфимский государственный авиационный технический университет
Россия, Республика Башкортостан, г. Уфа, ул. К.Маркса,12
450000
Тел.: +7-347-273-79-56
E-mail: ninufa@mail.ru

Зуева Мария Сергеевна, кандидат эк. наук, доцент
Уфимский государственный авиационный технический университет
Россия, Республика Башкортостан, г. Уфа, ул. К.Маркса,12
450000
Тел.: +7-347-273-79-56
E-mail: ninufa@mail.ru

Перевезенцева Анна Юрьевна, магистрант кафедры налогов и налогообложения Уфимский государственный авиационный технический университет
Россия, Республика Башкортостан, г. Уфа, ул. К.Маркса,12
450000
Тел.: +7-347-273-79-56
E-mail: ninufa@mail.ru

# FEATURES OF THE TRAINING SYSTEM AT THE MACHINE-BUILDING ENTERPRISE

**Galina Gagarinskaia, Irina Kuznetcova, Aleksandr Gagarinskii, Samson Kotmyshev**

**Abstract**

The article deals with the system of personnel training at the machine-building enterprise, including factors affecting the efficiency of training. There are suggested directions for improving the system of training personnel at the machine-building enterprise.

**Key Words**

Machine building enterprise, personnel training, personnel, factors.

**JEL Classification:** J59

## Introduction

The formation of the knowledge economy, the fierce competition in the market and the ever-changing economic conditions increase the need of the machine-building enterprise for modernization, which in turn requires management of the enterprise not only to purchase new equipment, but also to human capital.

## Factors affecting the effectiveness of training

Training of personnel is an integral part of the development of any organization. To identify the effectiveness of the system of training personnel in the enterprise, first of all, it is necessary to pay attention to the factors affecting it. The issues of training, retraining and advanced training of personnel in the conditions of market relations acquire special urgency. Before the internal training of personnel there are a number of fundamentally important tasks that are conditioned by the needs of adaptation of enterprises to the market, the re-profiling of production and modernization, the restructuring of employment and changes in the requirements for the quality of the workforce of the enterprise. Thus, it is necessary to take full account of the role of factors affecting the process of retraining and upgrading the skills of staff.

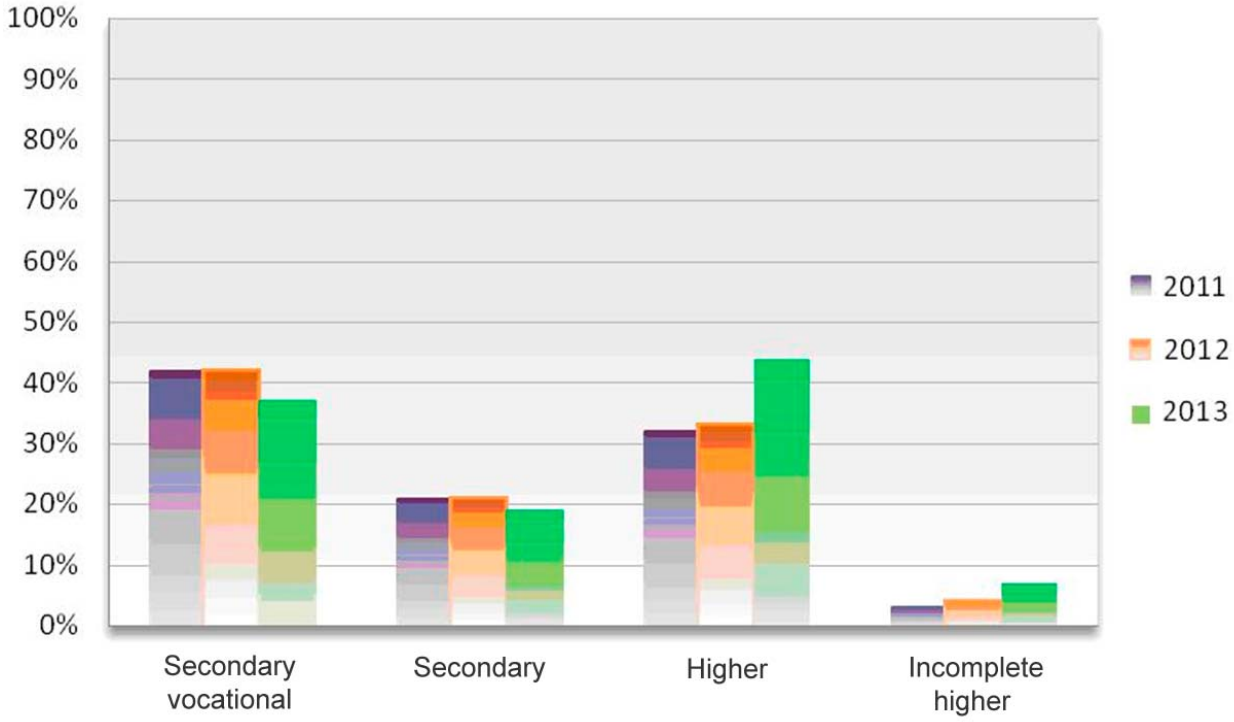
Classification of factors by levels:

- at the state level (macro level); Such factors include scientific and technological progress, changes in both legislative and regulatory framework, fiscal and monetary and industrial policies, priority directions of the state of macroeconomic regulation, the level of training of specialists in educational institutions, and others;
- at the regional level (meso level) – supply and demand in the labor market of the sector, availability of new educational programs, conditions for their implementation, expansion of the consumer product market;
- at the enterprise level: economic potential of the organization, resources, enterprise strategy, development trends, organizational culture, personnel reserve program, employee motivation (stability, loyalty, career opportunities).

The management system is represented by several subsystems: on the levels – strategic and general management; functionally they are: quality management system (QMS), development management, technical and technological management, financial and economic management, and personnel management.

For a deeper analysis of the system of in-house training of personnel in a machine-building enterprise, a personnel audit was conducted, the program of which included an audit of the organization and the system of in-house personnel training. The number of employees at the beginning of 2013 was 611 people. The enterprise is knowledge-intensive, despite the predominance of working specialties, 37% of employees have higher education (Fig. 1), which indicates a fairly high competence of workers, while the average grade of workers in the enterprise is 5. Recently, there has been an increase in the number of specialists in connection with the renovation of the nomenclature of made production.

Figure 1: Distribution of staff by education




The main documents regulating the evaluation of the effectiveness and efficiency of in-house training of personnel are the QMS "Personnel Management".

Professional development of the personnel of the enterprise is carried out in three basic forms of the organization of the educational process: additional vocational education, vocational training (additional vocational training) and special purpose courses.

Additional vocational education consists of professional retraining, advanced training, internships.

On the basis of secondary vocational and higher vocational education, professional retraining of specialists is carried out.

In accordance with the current "Regulations on the procedure and conditions for professional retraining of specialists", retraining of specialists is carried out taking into account the profile of the education received and is carried out by educational institutions of advanced training and subdivisions of educational institutions of higher professional education and secondary vocational education on additional professional programs of two types:

a) the first type of programs ensures the improvement of knowledge for the performance of a new type of professional activity. At the same time, the normative period for the professional retraining of specialists to perform a new type of professional activity should be more than 500 hours of classroom hours. The result of training in additional professional educational programs for the implementation of a new type of professional activity is the state final certification, confirmed by a diploma of professional retraining, certifying the right (conformity of qualifications) of a specialist to conduct professional activities in a certain field;

b) the second type of programs ensures the improvement of knowledge for obtaining additional qualifications. At the same time, the normative period for the passage of professional retraining for specialists to receive additional qualifications must be at least a thousand hours of capacity.

The result of training on additional professional educational programs for specialists receiving additional qualification is the state final certification, confirmed by a diploma of additional (to secondary vocational or higher) education, confirming the award of additional qualifications.

In assessing the effectiveness of training staff involved:

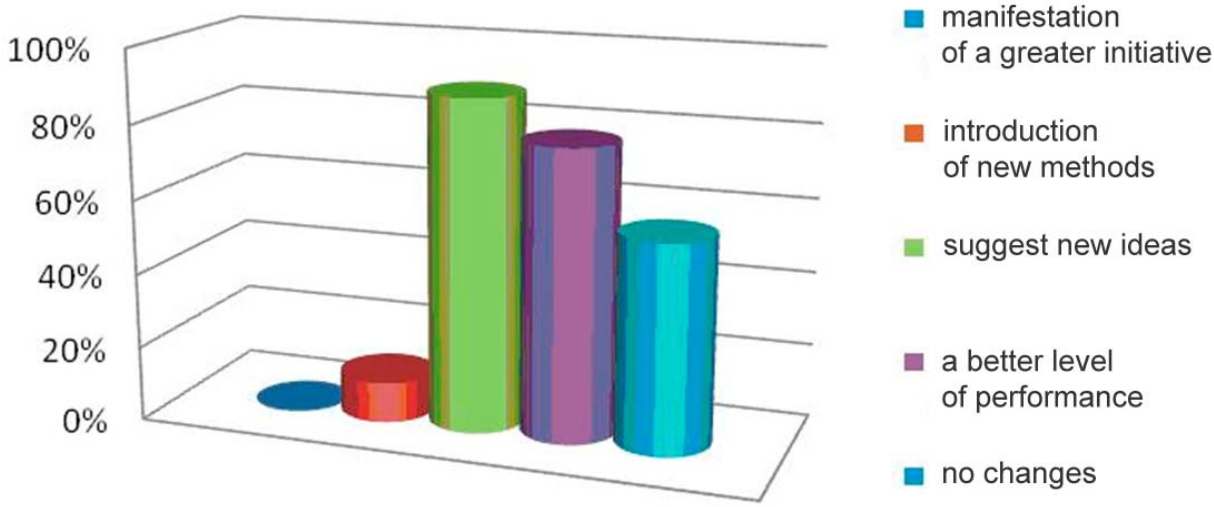
- employee trained in the enterprise;
- direct supervisor;
- Human Resources Officer.

Heads of structural units during the questioning were asked to note the results of employees on the training at the enterprise

In general, staff training plays an important role, since in the process of training, retraining, advanced training, the employee acquires new theoretical knowledge necessary for labor activity, and also enhances staff's ability to adapt to changing economic and production conditions, which allows the organization to solve problems associated with new areas of activity more successfully, and maintain the necessary level of competitiveness. At the same time, the level of staff loyalty to the organization is growing; the level of staff turnover is decreasing. Training allows maintaining the interest of employees in the corporate values and priorities of the organization. When assessing the effectiveness of investments, it is important to consider not only quantitative indicators, but also qualitative ones. Intrafirm training of personnel plays an important role, since in this process the employee acquires new theoretical knowledge necessary for the performance of labor activity, the level of staff loyalty to the organization increases, and the level of staff turnover decreases.

## Features of training personnel in engineering enterprises

Figure 2: Results of in-house training on the criterion of improving the quality of work performed in a machine-building enterprise




When considering Fig. 2 it can be seen that 44% of managers believe that after the training the employee begins to perform his duties at a higher quality level, which indicates a sufficiently high quality of training.

The effectiveness of the training procedure is determined by the quality of the selection of the curriculum and the organization of the learning process itself. In assessing the effectiveness of training involved a trained staff member and his immediate supervisor. Accordingly, the evaluation of the effectiveness of the training procedure is oriented:

- the satisfaction of the direct supervisor with the result of training the subordinate in accordance with the criteria: the convenience of the schedule for conducting training sessions, the correspondence of the contents of the disciplines and the list of educational topics to the needs of production, the availability of abstracts or handouts, the practical significance of organized training (is a preliminary conclusion);
- for the satisfaction of the person who has been trained by the acquired professional competencies, knowledge, skills and abilities on the following criteria: timely informing of all organizational issues related to training, the quality of the selection of the teaching staff, content of the disciplines and a list of training topics,disciplines to meet the needs of production, the availability of handouts, which helps to assimilate discipline, practical significance awn organized learning (tentative conclusion).

## Directions for improving the system of training personnel in a machine-building enterprise

To reduce the incidence of disruption in the internal training of personnel, a methodology was developed to determine the training needs on the basis of the questionnaire, which consists of the following blocks:

1st block. Information: information about the employee, the structural unit, the proposed curriculum and the location of the training (if the employee, the head can determine in advance).

2nd block. Substantial: the expected amount of theoretical knowledge that the employee or manager plans to obtain, the list of competencies necessary for development, the definition of the functional tasks that will help to solve the training.

3rd block. Organizational: to determine the need for a particular type of training, the supervisor provides answers regarding such parameters as the number of employees of the unit performing the functional tasks specified in the first block, the initial level of possession of the necessary knowledge of the employee based on a five-point scale, definition of the list of structural units that will benefit from the information received during the training on this course, whether the employee can train other employees after the course, what additional resources may be required to use the learning outcomes, the expected result that the trained worker will be able to demonstrate after applying the received knowledge, skills, skills in practice.

## Conclusion

By changing the level of qualification, the professional orientation of training, and also providing initial training for workplaces, the company ensures the most complete matching of the structure of workplaces to the structure of employees, taking into account the full set of requirements that the employer sets for the quality of the work performed. The system of personnel training within the firm should take into account both the interests of the organization in saving on costs, as well as in the rapid filling of vacant positions at the enterprise, and the interests of the worker in obtaining a full professional retraining. Hence the requirements for the flexibility of the training and development of personnel, the ability to quickly change the content, methods, organizational forms in accordance with the needs of production and the situation in the labor market. It is important for modern companies to pay attention to training and development of personnel, how to conduct this process, taking into account the optimal allocation of financial resources.

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## Address and contact information of the authors

Galina P. Gagarinskaia Dr. of Economics, professor
Chair of the Dept. “Economics and management of Organization”
Samara State Technical University
244 Molodogvardeiskaia ul. 443100, Samara, Russia
phone: +7 846 278 43 81
E-mail: eyo080505@mail.ru

Irina G. Kuznetcova PhD in Economics, Associate professor
Dept. “Economics and management of Organization”
Samara State Technical University
244 Molodogvardeiskaia ul. 443100, Samara, Russia
phone: +7 846 278 43 81
E-mail: irenekuz@yandex.ru

Aleksandr V. Gagarinskii, Associate professor
Dept. “Economics and management of Organization”
Samara State Technical University
244 Molodogvardeiskaia ul. 443100, Samara, Russia
phone: +7 846 278 43 81
E-mail: eyo080505@mail.ru
Samson D. Kotmyshev, PhD student
Dept. “Economics and management of Organization”
Samara State Technical University
244 Molodogvardeiskaia ul. 443100, Samara, Russia
phone: +7 846 278 43 81
E-mail: samson-kotmychev@mail.ru

# METHODOLOGY PROPOSAL OF SLOVAK INDUSTRIAL ENTERPRISE EMPLOYEES' COMPETENCY MODEL UTILISING AHP METHOD IN THE SUSTAINABLE DEVELOPMENT CONTEXT.

**Jurík Lukáš, Sakál Peter**

**Abstract**

The contribution is focused on the issue of the creation of Slovak industrial enterprise employees' competency model utilising AHP method in the Sustainable Development context. The objective of the contribution is methodology proposal of Slovak industrial enterprise employees' competency model utilising AHP method in the Sustainable Development context.For the conditions of industrial enterprises is available potentially several concepts which supported sustainable development. In the methodology proposal of competency model we are based on the concept Sustainable Corporate Social Responsibility, Creating sustainable shared value, concept Humanistic Economy, Bhutanese Development Concept and National Quality Programme of the Slovak Republic for the years 2017 – 2021 and Industry 4.0.

**Key Words**

Sustainable Development, competencies, competency model, Analytic Hierarchy Process

**JEL Classification:**C44, J24, M53

## Introduction

According to Drabek (2012), political, economic, social, ecological, moral and other manifestations of the global crisis development has highlighted the question of the relevance of the current neoliberal model of capitalism, which for 350 years has constituted a basic paradigm of development of the prevalent part of global society. There is to the formation of several concepts that would eliminate the shortcomings and problems in the current socio-economic system - unfair distribution of wealth, usurpation of power in the hands of a few "chosen ones", arrogant plundering of nature, natural resources and the man himself.

For the conditions of industrial enterprises is available potentially several concepts which supported sustainable development (SD) a sustainable corporate social responsibility (SCSR).

These concepts have been created by independent of each other protagonists UR and CSR. In the design of the methodology of competency model we are based on the concept Sustainable Corporate Social Responsibility, Creating sustainable shared value, concept Humanistic Economy, Bhutanese Development Concept and National Quality Programme of the Slovak Republic for the years 2017 – 2021 and Industry 4.0.

Competency model provides the tool for the strategic management of human resources, because only with thorough management it is possible to provide a quality human capital who will be able to fulfil the tasks and simultaneously disseminate and implement the ideas of sustainable development and corporate social responsibility concept. The human factor is becoming a differentiating factor. enterprises which at their disposal its high quality, it must be protected because the human factor forms the basis of competitive advantage based on human creativity, thought, and knowledge, i.e. on competencies.The importance of the human factor is increasing in connection with the transformation to sustainable development and sustainable corporate social responsibility.

The basis for a successful transformation from the strategy of unlimited economic growth to strategies of sustainable development sustainable corporate social responsibility in industrial enterprises is necessary to change the employee's competency models. In the creation of competency models it will be used social, environmental and economic criteria.

## 1 Concepts supporting sustainable development in industrial enterprises

Industrial enterprises are the most important of all the factors in the current economy of society. The only way the world can achieve the fulfilment of the principles of sustainable development (SD) is that global enterprises will join the philosophy and principles of SD. A real change will require new values and new ways of thinking. This, however, will require industrial enterprises to undergo the radical transformation of the transition to a new model of entrepreneurship, which is based on principle and criteria of sustainable development and strategy "win-win", respectively "games with nonzero sum". According to this strategy, industrial enterprises should focus more to contribute to the quality of life in the wider community, and they should create structures, processes and production, which aim is to meet the social, ecological and economic needs of people, whose lives are affected.

**Basic problems that are in contradiction to the SD principles in industrial enterprises are as follows (Steingart, 2008, Švihlíková, 2015, Staněk & Ivanová, 2016, Haluška, 2011):**

- ***Plundering of nature and natural resources.***
- ***Pollution of the environment.***
- ***Poverty, homelessness, working poverty is increasing in developed countries -*** *decreases real wages (decreases the size of the middle layer), labour productivity growth is not reflected in wage growth, it is big difference between the wages of ordinary employees and the wages of top managers.*
- ***Tax evasion, unbalanced tax mix*** *(cost outsourcing, socialization of losses).*
- ***The lack of basic business ethics leads to the prioritization of one-time deals aimed at robbing the other party*** *(strategy "win-lose").*

For the conditions of industrial enterprises is available potentially several concepts which supported sustainable development (SD) and corporate social responsibility (CSR). In contribution will be described in more detail concept Sustainable Corporate Social Responsibility, Creating Sustainable Shared Value, concept Humanistic Economy, Bhutanese Development Concept and National Quality Programme of the Slovak Republic for the years 2017 – 2021.

### 1.1 Sustainable corporate social responsibility

The concept of Corporate Social Responsibility (CSR) is kind of copy of a sustainable development at the business level. The main objective of a socially responsible business should be to contribute to the SD(Hrdinová et al., 2011).

Although there are a large number of definitions of the CSR and almost all definitions contain three components or areas: economic, social and environmental. In 2010, the International Standard ISO 26000 was issued: Guidance on social responsibility, in which the creators omitted the economic pillar, thereby they have violated the system approach. The standard is designed to help organizations to contribute to sustainable development. According to Hrdinová (2013) and on the base of a system approach Sustainable Corporate Social Responsibility (SCSR) is a subsystem of Sustainable Development and therefore must also include all three pillars.

Hrdinová (2013) further states that USZP is an integral part of the Sustainable Development strategy of an industrial enterprise. The SD strategy is comprehensive, respectively main business strategy based on the principles of the SD concept. This is the main strategy of an enterprise that takes responsibility for the state of the environment and wants to act so that its activities have no positive impact only on economic aspects, but also environmental and social.

Hrdinová (2013) has contributed to tackling business-related issues through "the concept of methodology proposal for the concept of sustainable CSR strategies development for SMEs" which emphasizes the historical continuity of the CSR concept following on the HCS model 3E concept. In this concept, working conditions should contribute to improving the quality of life of each employee in long-term sustainable and acceptable conditions of environmental quality and effective economic conditions.

### 1.2 Creating of Sustainable Shared Value

In 2006, Porter and Kramer released a breakthrough study "The Link Between Competitive Advantage and Corporate Social Responsibility" in which they focused on a Corporate Social Responsibility and a competitive advantage. They introduced a new term in this contribution – „Creating Shared Value" (Kuldová, 2012).

Porter and Kramer argued that the application of socially responsible business is separate from business strategy in many businesses and does not benefit the public (Porter, Kramer, 2006).

Šmida et al. (2011) are also looking at the problem through the role of the CSR in the context of the SD, which should transformation the global requirements for local measures and the related correction of their business activities. Resulting of these activities is a value for which the customer is willing to pay.

Enterprises should therefore take into account the sustainability of the enterprise and community itself, which they directly or indirectly influence through their activities. Šmida (2015) states that the long-term ability of any business to form the sustainable aggregate values of a business for which the customer is willing to pay is conditioned by the continuous incorporation and improvement of practices leading to social and environmental well-being.

Šmida (2015) in Dissertation thesis "Proposal for the creation the system of sustainable shared value of an industrial enterprise in the context of sustainable corporate social responsibility" proposed a system of sustainable shared values of an industrial enterprise which is open and as such represents a systemic tool for promoting sustainability in all business processes from the point of view social, environmental and economic with the aim of creating sustainable profit.

According to Šmida (2015), the functioning of a sustainable industrial ecosystem is based on the co-evolution of the global value chain, modified Porter's value chains and SCSR system.

Modified Porter's value chains as a model/system tool for Creating Sustainable Shared Value (CSSV) influence conceptually/value to the SCSR system of industrial enterprises. This means changing the thinking paradigm in the transition from the strategy with a zero sum to a strategy with a nonzero sum that causes a change in creation and distribution of profits.

**Šmida (2015) proposed and developed a methodology of the Creating of Sustainable Shared Value system, which consists of the following steps:**

1. ***Acquaint yourself with the issue of SD, SCSR and CSSV.***
2. ***Public acceptance of commitment to CSSV.***
3. ***Specification of a set of values based on sustainability.***
4. ***Strategic Planning of a Sustainable Shared Value System.***
5. ***Implementing and managing a system of Sustainable Shared Value.***
6. ***Checking the system and evaluating the results achieved.***
7. ***Reporting business results resulting from Creating Sustainable Shared Value.***
8. ***Constantly sustainable improving the system of Sustainable Shared Value.***

The basis of the proposed Sustainable Shared Value model is the above-mentioned methodology creating of the Sustainable Shared Value system. An enterprise should connect to the co-evolution of the sustainable global value chain, modified Porter's value chains and SCSR system by creating, managing and sustainable improvement Sustainable Shared Value system.

The enterprise will contribute to the sustainable improvement of the quality of work, life and production of the enterprise itself by Accepting and incorporating the social, environmental and economic dimension into business with the goal of Creating Sustainable Shared Value (Šmida, 2015).

### 1.3Concept Humanistic Economy

The Humanistic Economy has the chance to create a mutually interconnected economic mechanism based on useful added value and honest exchange values (prices) of the individual usefulness, for the people needed, including rental prices of production factors. And all in the rational

economic regulation of the consumption of these usefulness, in relationship with the existing relative exhaustiveness of the resources of this planet, while improving the quality of the environment.

The basic characteristic of the Humanistic Economy is the change from the current effort to maximize profits, to maximize the production of useful added value and to its fair distribution, especially among the basic production factors: the owners of production and investment resources and the owners of living creative work. The position of profit will be replaced by a fairly valued added value. This change is realized in the mechanism of the Humanistic Economy by the fact that the owners of all of the factors the pre-determined shares of the added value produced. Then the maximization of the income of each owner of the production factors is only feasible if the greatest volume of realized value added is produced. Because getting bigger incomes at the expense of the other will no longer be possible after the agreement is reached (Haluška, 2010).

**Haluška proposed the following steps in the promotion of the Humanistic Economy (Haluška, 2011, Haluška, 2015):**

1. ***Start promoting a more equitable and predetermined share of the jointly created added value.***
2. ***Restrict investment opportunities to produce virtual bubble value, risk operations, especially in the financial market.***
3. ***The participation of the participating production factors in the creation and realization of the added value use to for the economic pressure to increase the transparent, statistically evaluated efficiency of the use of input tangible and intangible goods and to increase the transparent, statistically evaluated productivity of added value.***
4. ***This will enable the concentration of creativity, the use of scientific and practical knowledge to increase efficiency and productivity.***
5. ***Restriction and gradual liquidation of investments in the virtual economy.***
6. ***Sufficient quantity of investment tools has a chance to change the current migration of people to work to migrate of means of production to human resources to their natural home environment.***
7. ***More equitable division of added value amongst owners of past work and the owners of the actual live creative work, among which a special part, from a separately negotiated share of the added value, will be top management, it will objectively imply an increase income of employees.***
8. ***Growth in investment volume will create the conditions for faster growth of live work productivity.***
9. ***The second part of the employees' earnings will be their revenue shares from the leasing of investment funds, that is to say the added value of leasing companies and sovereign wealth funds.***
10. ***Past work, based on the principle of real and necessary moderate inflation, creates the rule of a fall in the price of past work, compared to the price of current live creative work.***
11. ***Applying the mechanism of the Humanistic Economy in banks, insurance companies, development of leasing companies and state investment funds will lead to a fundamental change in the financial system, not allowing the creation of bubble added value.***
12. ***The mechanism of the Humanistic Economy has a chance to eliminate serious business risks today from insolvency of customers, from unavailability of credit, from unstable interest rates, from unexpected exchange rate changes, but especially from local or global crises.***
13. ***The Humanistic Economy will require the preservation of state and global influence over all natural resources.***

The fundamental criterion for the success of humanistic business as well as other subjects will be their honest contribution to the sustainable growth of the quality of life of individuals, the local and territorial community, the state and the Union in which it operates (Haluška, 2011).

A similar approach to quality of life also includes the concept HCS model 3E, created at the University of Iowa (USA) and the Institute of Industrial Engineering, Management and Quality, The

Faculty of Materials Science and Technology in Trnava, Slovak University of Technology. The basic aim of this concept is to achieve quality of work, quality of production (products and services) and quality of life.

The Concept Sustainable Development (CSD) and the Concept Humanistic Economy (CHE) have objectively many common features and a broad penetration (Table 1).

Table 1: Penetrations of Concept of Sustainable Development and Concept Humanistic Economy

| The Concept Sustainable Development (CSD) | The Concept Humanistic Economy (CHE) |
|---|---|
| In order to achieve the TUR, environmental protection must be an integral part of the development process. | CHE Besides the economic principles to ensure the sustainability of the growth of quality of life, KHE emphasizes the protection of the environment. |
| CSD emphasizes the cooperation of states to achieve SD in the form of exchanges of scientific and technological knowledge with an emphasis on raising the level of development. | CHE recommends protecting nature and the environment by using scientific and technical knowledge to accelerate the growth of quality of life. |
| To achieve SD and a better quality of life for all people, states should reduce and eliminate unsustainable patterns of production and consumption. | CHE conditional on the production and consumption model where products will be produced to meet real needs/requirements. |
| Environmental issues are best addressed with the participation of all concerned citizens at the appropriate levels. At the national level, every individual must have proper access to environmental information. | CHE emphasizes the need for participative decision-making and management in all aspects of the functioning of society. |
| Creative skills, ideals and the courage of young people around the world should be mobilized to create a global partnership that would make it possible to achieve SD. | Based on the CHE, the use of scientific and technical knowledge will accelerate the growth of quality of life and lead to sustainable long-term growth. |

Source: Jurík, 2017

### 1.4The Bhutanese Development Concept

In contrast to the emphasis on economic growth as the main goal of the society, the King of Bhutan JigmeSingyeWangchuck introduced in 1972 an index “Gross National Happiness” (GNH) to express the success of the country through the fortunes of the citizens of Bhutan.

In 2011 Prime Minister of Bhutan JigmeThinley He marked the last major economic crisis for the expression of an inexorable human greed, and subsequently presented to the United Nations a proposal for a resolution on gross national happiness. Resolution “Happiness: Towards a Holistic Approach to Development” was adopted unanimously by all 193 member countries.

**The concept of GNH has often been explained by its four pillars (Centre for Bhutan Studies & GNH Research, 2016, Gross National Happiness, 2016):**

1. ***Good Governance.***
2. ***Sustainable socio-economic Development.***
3. ***Cultural preservation.***
4. ***Environmental conservation.***

**Lately the four pillars have been further classified into nine domains in order to create widespread understanding of GNH and to reflect the holistic range of GNH values. The nine domains are (Centre for Bhutan Studies & GNH Research, 2016, Gross National Happiness, 2016):**

1. ***Psychological wellbeing.***
2. ***Health.***

3. ***Education.***
4. ***Time use.***
5. ***Cultural diversity and resilience.***
6. ***Good Governance.***
7. ***Community vitality.***
8. ***Ecological diversity and resilience.***
9. ***Living standards.***

The Concept Sustainable Development (CSD) and the Bhutanese Development Concept (BDC) have objectively many common features and a broad penetration (Table 2). Both concepts place emphasis on changing the character of leaders, in terms of business to owners and managers.

Table 2: Penetrations of Concept of Sustainable Development and Bhutanese Development Concept

| The Concept Sustainable Development (CSD) | Bhutanese Development Concept (BDC) |
|---|---|
| Human beings are at the centre of interest in SD. They have the right to a healthy and productive life that is in harmony with nature. | The objective of Bhutan's government is to help the people in their goal - to fulfil his desire for happiness. |
| In order to achieve the SD, environmental protection must be an integral part of the development process and cannot be understood in isolation. | The BDC rejects the uncontrolled destruction of nature, BDC is opposed to the senseless mining of minerals for the sole purpose of increasing profits masking the alleged attempt to improve human life. |
| To achieve SD and a better quality of life for all people, states should reduce and eliminate unsustainable patterns of production and consumption. | BDC recommends to change consumer-oriented habits, encouraging people to modesty and adequate consumption. The Kingdom of Bhutan will not allow in its territory any advertising that pollutes the inner and outer environment of man. |
| Environmental issues are best addressed with the participation of all concerned citizens at the appropriate levels. At the national level, every individual must have proper access to environmental information. | People in Bhutan are involved in the protection and sustainable use of the environment. Constitution of Bhutan define minimum coverage 60% the territory of Bhutan by forests. |
| Creative skills, ideals and the courage of young people around the world should be mobilized to create a global partnership that would make it possible to achieve SD. | Leaders in the BDC must be those who meet the true spiritual criteria of the leader - knowledge, compassion, and determination - they must be in balance. |

Source: Jurík, 2017

### 1.5National Quality Programme of the Slovak republic

The Slovak Republic had also joined to the goals of sustainable development. Their fulfilment will be coordinated by the Government Office of the Slovak Republic.

National Quality Programme of the Slovak Republic: Strategy to improve the quality of products and services by improving organizations 2017-2021 also has a role to play in contributing to the sustainable development of the Slovak Republic. National Quality Programme was created by Slovak Office of Standards, Metrology and Testing. The mission of the National Quality Program is primarily focused on support the improvement of product and service quality by improving both public and private sector organizations with a focus on sustainable quality of life and competitiveness in all areas of society.

**The key factors that will be essential for the successful implementation of the Quality Improvement Strategy are as follows (Slovak Office of Standards, Metrology and Testing, 2016):**

- ***Using the principles of quality management and their level of application in practice.***
- ***Strengthening awareness and learning about quality management tools and methods.***
- ***Strengthen benchmarking.***
- ***Demonstration of social responsibility.***
- ***Increasing leadership on the level of top management.***
- ***Increasing personal motivation to improve quality.***
- ***Higher quality in education and training in the continuous improvement process.***
- ***Creating an optimal institutional environment, more favourable conditions for more effective collaboration between universities, businesses and organizations in developing methodology and approaches to quality in the efficient use of quality management tools and methods.***

**National Quality Programme of the Slovak Republic 2017 - 2021 defines 8 principles of excellence for public and private organizations (Slovak Office of Standards, Metrology and Testing, 2016):**

1. ***Results orientation.***
2. ***Focus on citizen - customer.***
3. ***Leadership and constancy of intent.***
4. ***Process Management and Data Management.***
5. ***Development and engaging people.***
6. ***Constantly learning, innovation and improvement.***
7. ***Partnership development.***
8. ***Social Responsibility.*** *Public and private sector organizations must assume their social responsibility, respect ecological sustainability and try to meet the main expectations and demands of the local and global community.*

## 2 Methodology proposal of Slovak industrial enterprise employees' competency model utilising AHP method in the Sustainable Development context

**Within this part of contribution, we focused on the following areas:**

1. ***The proposal of Sustainable Development concept of an industrial enterprise.***
2. ***The proposal of Sustainable Personnel Strategy and Sustainable Competency Model in the Sustainable Development Strategy of Industrial Enterprise.***
3. ***Methodology proposal of Slovak industrial enterprise employees' competency model utilising AHP method in the Sustainable Development context.***

### 2.1The proposal of Sustainable Development concept of an industrial enterprise

**When designing our concept, we used the following partial concepts (Figure 1):**

1. ***Concept Humanistic Economy (CHE).***
2. ***Sustainable Corporate Social Responsibility (SCSR).***
3. ***Creating sustainable shared value (CSSV).***
4. ***Bhutanese Development Concept (BDC).***
5. ***Industry 4.0.***
6. ***National Quality Programme of the Slovak Republic (NQP).***

Following on the results the dissertation thesis of Hrdinová (2013), the competency model will be created on SD principles and criteria only if all the pillars - social pillar, environmental pillar, economic pillar are represented in the creation of competency models (Figure 1).

**SD≈ (Soc,p ∧ Env,p ∧ Ec,p),** (1)

kde:

≈ - Material equivalence.

∧ - Logical conjunction.

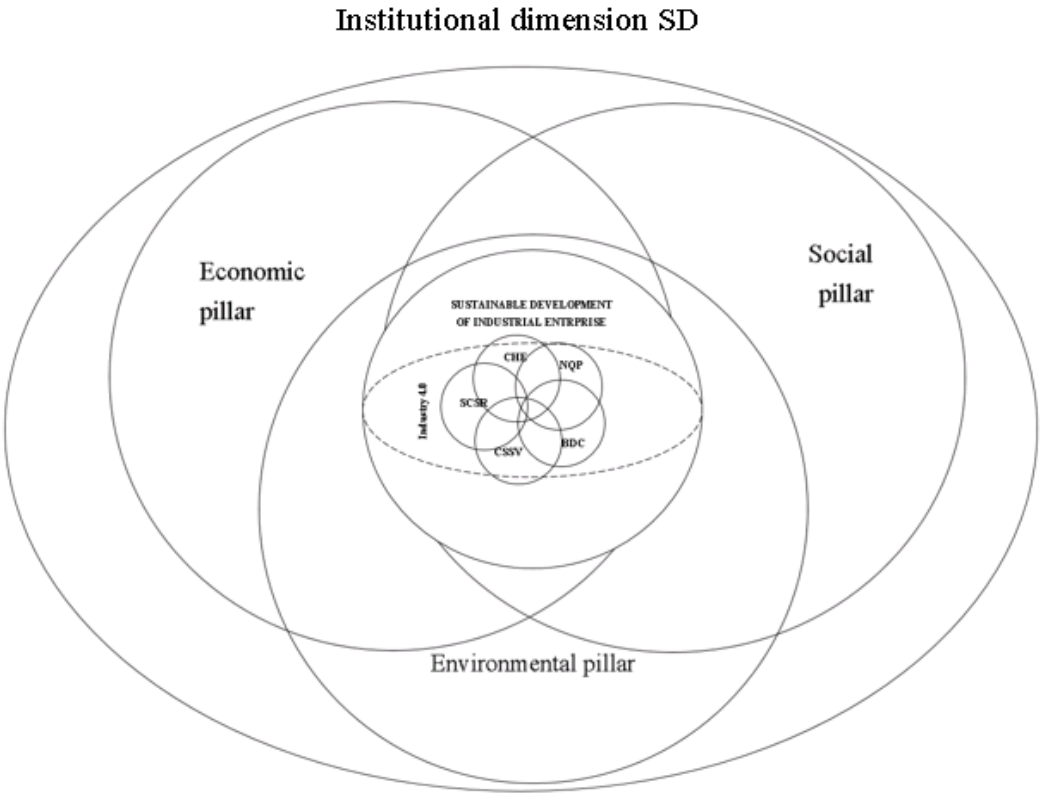
Soc,p - social pillar.

Env,p - environmental pillar.

Ec,p - economic pillar.

In the penetration of the individual pillars is placed our proposal of SD concept of the industrial enterprise (Figure 2). Of the many existing concepts, we chose 6 concepts that paradigmatically served us as philosophical-conceptual bases for the methodology proposal of Slovak industrial enterprise employees' competency model utilising AHP method in the Sustainable Development context.

Figure 1: The penetration of the institutional dimension of the SD with the proposal of the SD concept of industrial enterprise, source: own elaboration

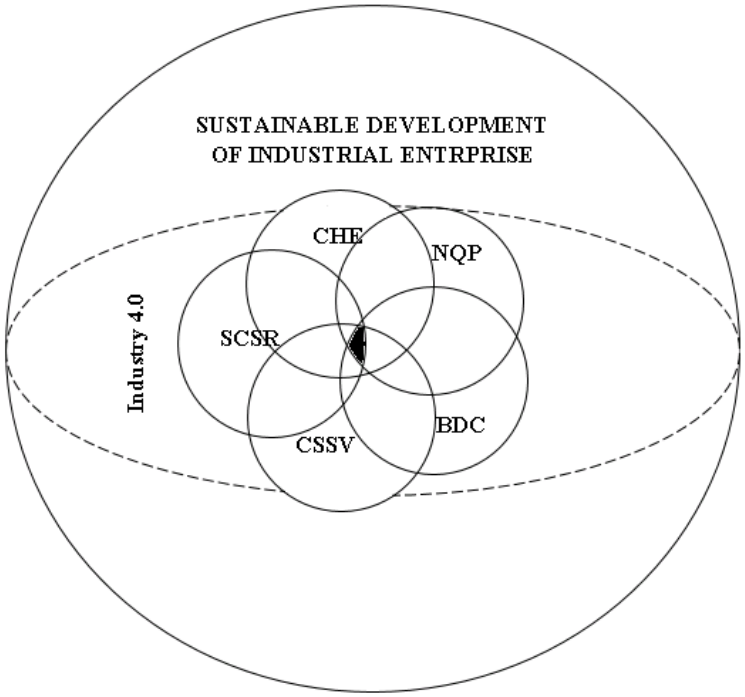



Source: Jurík, 2017

Achieving sustainable development (of industrial enterprise) should be the primary objective of overall company development that can be achieved by applying individual concepts supporting SD. Figure 1 and Figure 2 illustrate the Industry 4.0, which we do not perceive primarily as a concept supporting the achievement of an industrial UR but as a possible source of social, environmental and

economic negative problems. However, if the focus of the Industry 4.0 (its elements) is directed towards the quality of human life, the quality of the environment and the quality of work, it can potentially improve the quality of life of people.

Figure 2: The penetration of the institutional dimension of the SD with the proposal of the SD concept of industrial enterprise




Source: Jurík, 2017

Based on the results of the dissertation thesis of Hrdinová (2013) and the penetration of the above-mentioned concepts, we proposed 3 criteria of the concept of sustainable development of the industrial enterprise for the process of creating sustainable competency models of managers in industrial enterprises (PC SCM MIE), which are:

1) *Criterion „Sustainable quality of work – SQW";*
2) *Criterion „Sustainable quality of life – SQL";*
3) *Criterion „Sustainable quality of production – SQP".*

If National QualityProgramme(NQP) is the equivalent of the logic conjunction SQW, SQP and SQL then the process of creating sustainable competency models of managers in industrial enterprises is also equivalent to the logical SQW, SQL, and SQP.

$$\mathbf{(NQP \approx (SQW \wedge SQL \wedge SQP)) \rightarrow (PC\ SCM\ MIE \approx (SQW \wedge SQL \wedge SQP))} \quad (2)$$

$\approx$ - Material equivalence,
$\rightarrow$ - Material implication ("if" "then"),
$\wedge$ - Logical conjunction.

**2.2The proposal of sustainable personnel strategy and sustainable competency model in the sustainable development strategy of industrial enterprise**

The basic tool of a sustainable personnel strategy should be a sustainable competency model of employees which is created based on a sustainable personnel strategy based on the SD and SCSR criteria. This sustainable competency model along with the individual 4 areas of its utilization

(selection, development, evaluation, and remuneration of employees), an open, evolving system based on feedback and a spiral based on PDCA cycle (Figure 3).

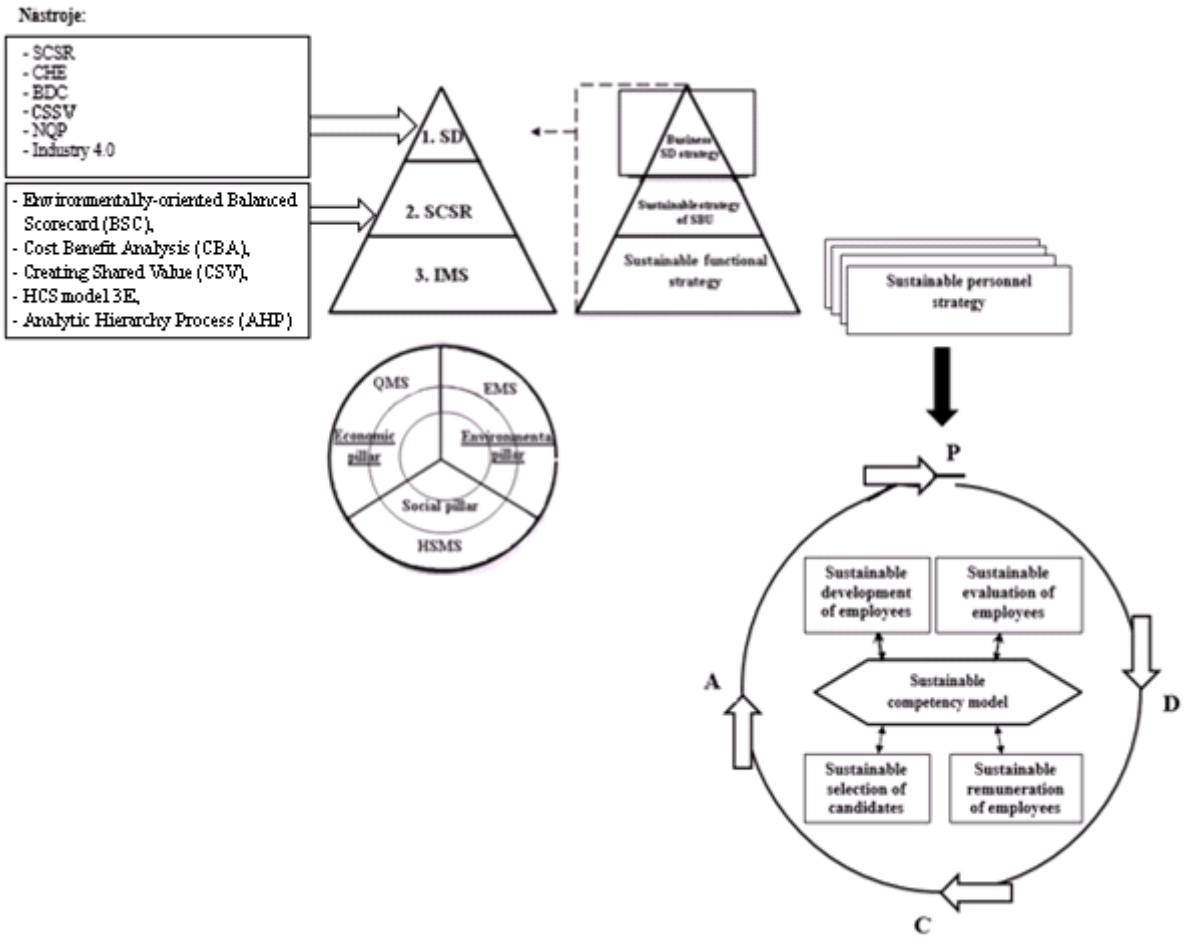
**Based on the proposed system of Sustainable Personnel Strategy, the following applies:**

**SSDE ⊃ SS SBU ⊃ SFS** (3)
⊃ - Symbol of subsystem,
SSDE – Strategy of Sustainable Development of the enterprise
SS SBU – Sustainable strategy of Strategic business unit
SFS – Sustainable functional strategies

Then:
**SFS ≈ (SPS** ∧ UMS ∧ UVS ∧ UFiS ∧ ULS ∧ UES ∧...∧) (4)
**SPS – Sustainable personnel strategy.**
SMS – Sustainable marketing strategy.
SPrS – Sustainable production strategy.
UFiS – Sustainable financial strategy.
SLS – Sustainable logistics strategy.
SES – Sustainable environmental strategy.

Then, **Sustainable Personnel Strategy (SPS) is defined:**
**SPS**≈ (SEP ∧**SSE**∧ **SE&SED**∧SM&CPE∧**SE&RE**∧SCWR∧SCWC∧SS&ME∧...∧) (5)
SEP – Sustainable employee planning.
**SSE – Sustainable selection of employees,**
**SE&SED – Sustainable education and sustainable employee development.**
SM&CPE – Sustainable management and career planning of employees.
**SE&RE– Sustainable evaluation and remuneration of employees.**
SCWR – Sustainable creation of work relations.
SCWC – Sustainable creation of working conditions.
SS&ME – Sustainable stimulation and motivation of employees.

Figure 3:The proposal of Sustainable Personnel Strategy and Sustainable Competency Model in the Sustainable Development Strategy of Industrial Enterprise




Source: own work by Jurík, 2017

**2.3Methodology proposal of Slovak industrial enterprise employees' competency model utilising AHP method in the Sustainable Development context**

**Methodology of the creation of competency model employees of industrial enterprises in Slovakia by using the AHP method in the context of Sustainable Development consists of the following steps**(Figure 4):

1. ***Decision of owners or top management about creation of competency model.***
2. ***Assessing the existence of a competency model in an enterprise.***
3. ***Defining the objective, purpose and use of the competency model in an enterprise.***
4. ***Choosing a competency model creation approach.***
5. ***Building of project team.***
6. ***Specification of sustainability values.***
7. ***Identifying different levels of sustainable performance.***
8. ***Defining and describing competencies.***
9. ***Assess of compliance competency model with the strategy of SD enterprise, vision of SD enterprise and mission of SD enterprise.***
10. ***Creating a new - sustainable competency model or reworking the original competency model (using Analytic Hierarchy Process).***
11. ***Validation of a sustainable competency model.***

### *12. Use of a sustainable competency model in individual areas (using Analytic Hierarchy Process for selection of candidates, development, evaluating and reward of employees.*

Within Methodology proposal of Slovak industrial enterprise employees' competency model utilising AHP method in the Sustainable Development context**we propose to use the analytical hierarchical process (AHP) in 2 steps, namely:**

- **Step 10:** ***Creating a new - sustainable competency model or reworking the original competency model.***
- **Step 12:** ***Use of a sustainable competency model in individual areas.***

***The general procedure for applying the AHP method through Expert Choice software is as follows:***

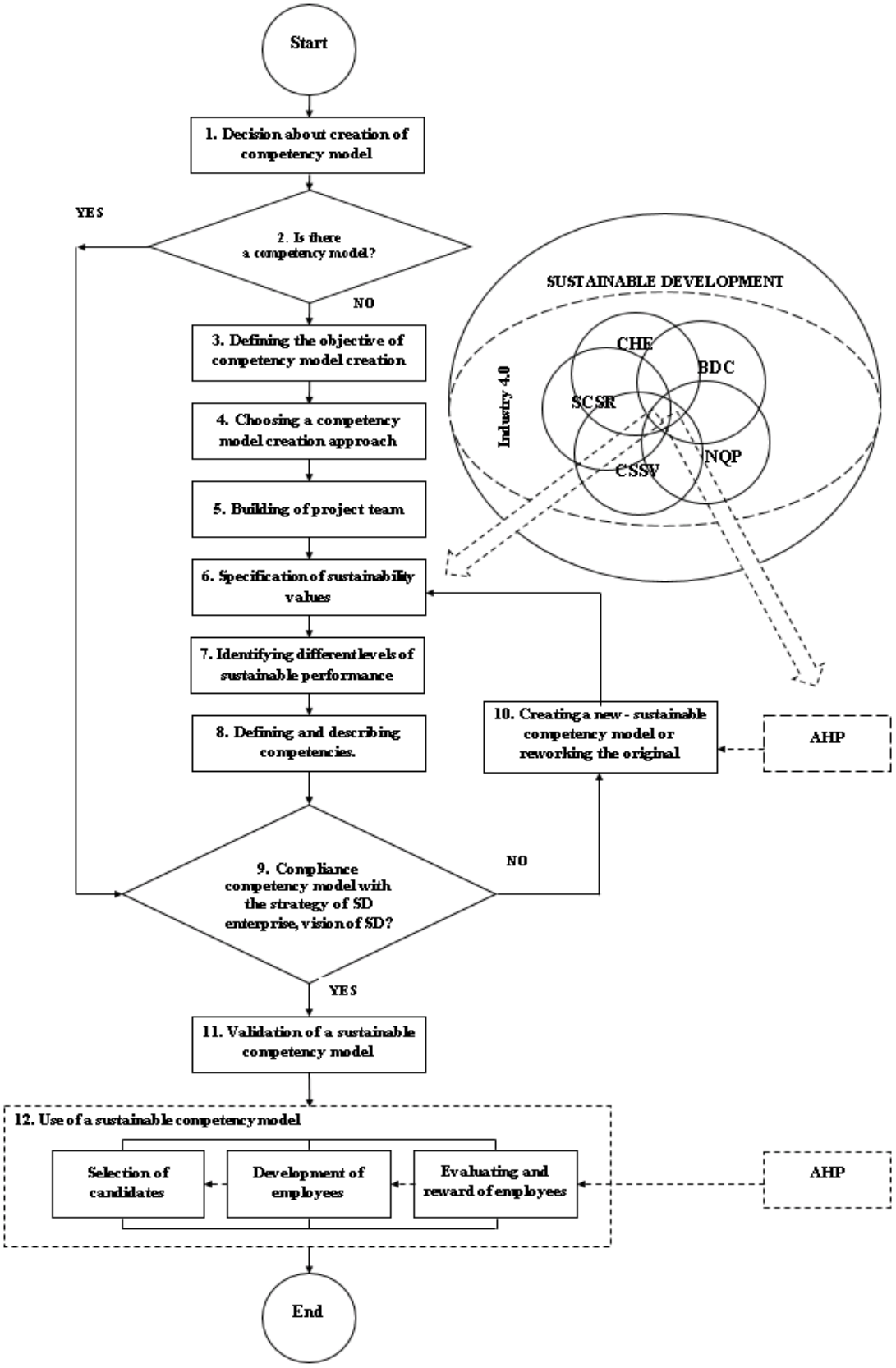
- ***Defining of the objective, criteria and different solutions.***
- ***Determining the weight of individual criteria by pairwise comparison.***
- ***Evaluation of individual variants by pairwise comparison.***
- ***Evaluation of order of variants.***

***Using AHP method in step 12: "Creating a new - sustainable competency model or reworking the original competency model".***

*Within application design the AHP method to create a new Sustainable Competency Model, it is necessary to create a hierarchical structure according to the following procedure:*

- ***Defining of the objective:*** *"Creating a new Sustainable Competency Model".*
- ***Defining of criteria:*** *Criterion „Sustainable quality of work – SQW";*
  *Criterion „Sustainable quality of life – SQL";*
  *Criterion „Sustainable quality of production – SQP".*
- ***Defining of solution variants:*** *Sustainable competencies itself supporting the building of sustainable development in industrial enterprises.*

Figure 4: Methodology proposal of Slovak industrial enterprise employees' competency model utilising AHP method in the Sustainable Development context




Source: Jurík, 2017

**Using AHP method in step 12: "Use of a sustainable competency model in individual areas" is followed (Jurík, 2017):**

1. ***In the selection of candidates.*** It is possible to measure the level of individual competencies of the individual candidates, and then the AHP method will allow us to obtain a synthetic indicator of the level of all competencies (quality indicator of individual applicants).
2. ***In the development of employees.*** It is possible to measure the development of individual competencies, but also the development of level of the total set of required competencies of employees after completion of the courses and thereby to measure their contribution to the development of competencies.
3. ***In the evaluation of employees and subsequently also in their remuneration.*** The option of evaluation on the basis of the desired level of set of competencies, in the case of comparison with other employees and subsequently a connection of the evaluation with the remuneration system, specifically a connection with the variable component of wage.

## Conclusions

The ability to transform the current strategy of unlimited economic growth to strategy of SD and SCSR is the only basis for the continued existence of life on planet Earth. The basis for this transformation is a paradigm shift of thinking in the field. Owners and employees of industrial enterprises, as well as all stakeholders must be adapted to this reality. By the transition to a new business model which is based on the UR and USZP and strategies "win-win" will created equal relationship between people, nature and the economy. It will create a fair relationship between employees and employers. Managers will have a specific position in this relationship. They will have to dispose to the "new" competencies that support the SD and SCSR in industrial enterprises. AHP method is suitable tool for creating of competency model and then for their application for selection, development, evaluation and remuneration of employees.

The objective of the contribution was to create and describe methodology proposal of Slovak industrial enterprise employees' competency model utilising AHP method in the Sustainable Development context.

*The contribution is based on the results of the project APVV No. LPP-0384-09: "Concept HCS model 3E vs. concept Corporate Social Responsibility (CSR)." and the project KEGA No. 037STU-4/2012: Implementation of the subject of "Corporate Social Responsibility Entrepreneurship" into the study programme of Industrial Management in the second degree of study at STU MTF Trnava.".*

*The contribution is also a part the project VEGA No. 1/0235/17: "System identification of complex assumptions to support industrial innovation and employment in the less developed regions of Slovakia.".*

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## Address and contact details of authors

Ing. Lukáš Jurík
prof. Ing. Peter Sakál, CSc.
Slovak University of Technology in Bratislava
Faculty of Materials Science and Technology in Trnava
Institute of Industrial Engineering and Management
Jána Bottu č. 2781/25
917 24 Trnava (Slovak Republic)
E-mail:
lukas.jurik@stuba.sk
peter.sakal@stuba.sk

# THE APPLICATION OF QFD METHOD FOR RACIONALIZATION OF THE STRETCH FILM PRODUCTION PROCESS IN PAP-PEX SLOVAKIA, LTD.

**Mário SCHNEIDER, Augustín STAREČEK, Natália HORŇÁKOVÁ, Dagmar CAGÁŇOVÁ**

**Abstract**

The competitive pressures strengthened in the 21st century caused that companies are forced to innovate their products as well as traditional and well-established production processes and technological procedures. Innovation management provides situation resolution which, and if applied properly, it helps create a competitive advantage.

The main objective of the paper is application of the QFD method for optimization of the stretch film production process at PAP-PEX SLOVAKIA, Ltd. in order to respond faster to the customers' requirements. Stretch film is the output of a complex system of stages in the production process which mastering brings to market the packaging material needed for a wide range of customers. The application of the QFD method in the company was carried out in cooperation with a team consisting of employees of PAP-PEX SLOVAKIA, Ltd. and the authors of the paper.

**Keywords:**Process management, Innovation management, QFD method, House of Quality

**JEL Classification:** C02, M11, O30

## Introduction

Nowadays, it is important for companies to recognize the need for a process approach that can be effectively managed by process management. Process management, according to Smida (2007), is an approach that ensures continuous improvement of organization performance through systems, procedures, methods and various tools. The application of process-oriented approach is referred to as BPM (Business Process Management). This concept represents a revolutionary innovation in the use of information technology to manage business processes, achieving high performance (Weske, 2007). The aim of the process management is to develop and optimize the organization's operation in a way to efficiently, purposefully and economically respond to customer requirements (Grasses, Dubec and Horak, 2008). In general, in process management, the process consists of partial sub-processes in which specified activities are carried out. It is important to understand the process from customers' point of view because their requirements are the main input for the overall transformation activity of the company. In the process, customer requirements are transformed into outputs by creating or adding specific values. The customer can be understood not only as a final consumer but also as another internal or external article entering the process of creating new outputs (Florekováet al., 2001).

## 1 Innovation Management and Innovation Methods

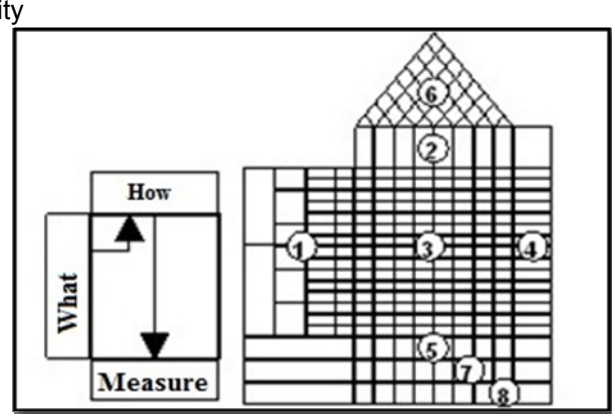
Innovation management can be understood from a number of perspectives. The authors mention some definitions: Innovation management, managing innovations or management of innovations, according to Kolenčík and Košaková (2008), is a "managerial tool for effective management of innovation processes in a business unit", resulting in products and services with maximum value for the customer. The definition of the term innovation is not unambiguous in literature, but from a practical point of view, according to Turek and Mičieta (2003) innovation represents "practical refinement of ideas into new products (goods and services), processes, systems and social relations".

The use of innovative methods to rationalize processes is nowadays almost a necessity. Enterprises expect a higher return on investment and effective results of production activities. Many systems and innovative methods of process management originated in Japan, and America gradually implemented them in their businesses and subsequently found their place in Europe (Rudy et al., 2012). Examples of innovative methods for process improvement in process management are: Lean Management, Kaizen, Kanban, JIT (Just in Time), Six Sigma, DMAIC - Improvement Cycle, PDCA - Deming Cycle, TQM (Total Quality Management), QFD Method, and many others (Rudy et al., 2012).

## 2 QFD method (Quality Function Deployment)

Quality Function Deployment Method evolved in Japan and comes from the words "Hinshitsu" - quality, "Kino" - function, and "Tenkai" - elaboration. The main goal of the method is to transform customer requirements into technical parameters of a product. For this purpose, a system consisting of matrix diagrams is used, which resemble a house, thus they are called "House of Quality". The "House of Quality" is shown in Figure 1, along with a numeric representation of the sequence of filling in the individual "rooms" in the "House of Quality" template. The result of the QFD method is the expression of the correlation dependencies of the selected technical parameters (API, 2016).

Figure 1: House of Quality




Source: Košturiak, 2007

As can be seen in Figure 1 "House of Quality", customers' requirements represent "what," the individual technical parameters of the product are expressed as "how" and "measures" are the result of the "what" and "how" matrices (Kosturiak, 2007). The numerical "House of Quality" processing procedure outlined above in Figure 1 is as follows:

**1. Determining the customer's requirements for a product, construction, process or system** - at this point, it is necessary to list the given product requirements that have the greatest impact on the customer's quality. The requirements are then necessary to be evaluated numerically, alternatively in percentage, by importance. The first "room" is the cornerstone of the QFD method and reflects the company's experience and priority customer orientation.

**2. Creating a list of product characteristics to meet the requirements instep 1** - in the next "room", the technical parameters that affect the customer's requirements listed in point 1 are mentioned. These are the characteristics that affect the product at all stages of the production process. For this reason, process management is necessary or to know the production process in detail and to identify the interrelationships between the processes and their effects on the final product. It is mostly in the hands of company technologists.

**3. The graphical representation of relations between customer requirements and product characteristics** - "room" connects step 1 - customer requirements and step 2 - technical parameters of the product's production process. In the "House of Quality" matrix, relationships are formed between the two points based on the strength of the relationship. There is a strong relationship with a point score of 9, a median with a point score of 3 and a weak relationship with a point score of 1. However, not every customer requirement is related to all the parameters of the production process. Where a

relationship cannot be created, a box is left blank. These relationships may also have their graphic processing, which is mentioned in the key of "House of Quality". The result of the relationships created is the mathematical calculation of the critical characteristics of the product or its technical parameters. Based on the multiplying the score of the relationship strength with the percentage value of the importance of the individual requirements for each technical parameter individually, the highest values are selected and these parameters are marked as critical.

**4. The assessment of Customer Requirements Compared to Competitive Products** - provides an insight into how the customer's requirements meet the products of a particular company and at the same time make it possible to compare them with competing products. The comparison is based on the point assessment that the company determines itself. The result of the analysis of competitors is a graphical representation of that comparison and it is possible to see which requirements need to be improved to attain at least the same level of customer satisfaction as achieved by the competition.

**5. The evaluation of competitive characteristics** - in the same way it is also possible to evaluate given technical parameters of the production process of the company with competitor's values of technical parameters.

**6. The graphical representation of the resulting correlation between the individual characteristics** - based on the results of the mathematical calculations from the matrix of relations between the customer requirements and the technical parameters of the production process in step 3, the logical pairs with the highest values are selected and a certain correlation is depicted graphically between them. There are four types of correlation dependencies:

- strongly positive correlation,
- positive correlation,
- negative correlation,
- strongly negative correlation.

Similarly, the graphical representation is expressed in the key of "House of Quality" matrix.

**7. Goal processing** – the "Room" contains specific target values of technical parameters that the enterprise wants to meet. At the same time, a tendency whether the current value of the parameter should be maximized or minimized is set or the goal is to achieve a specific value.

**8. The selection of the control characteristics to be processed at the next point** - in the last step, the technical parameters which are important for processing of the following "House of Quality" of QFD are chosen. (Kosturiak, 2007)

## 3 The Company PAP-PEX SLOVAKIA, Ltd.

PAP-PEX SLOVAKIA, Ltd. is the first and only producer of hand and machine stretch film in the Slovak Republic and one of the leading suppliers of packaging materials for final consumers as well as wholesalers (Pappex, 2016). In Figure 2 the building of PAP-PEX Slovakia, ltd. can be seen.

Figure 2: PAP-PEX SLOVAKIA, ltd.

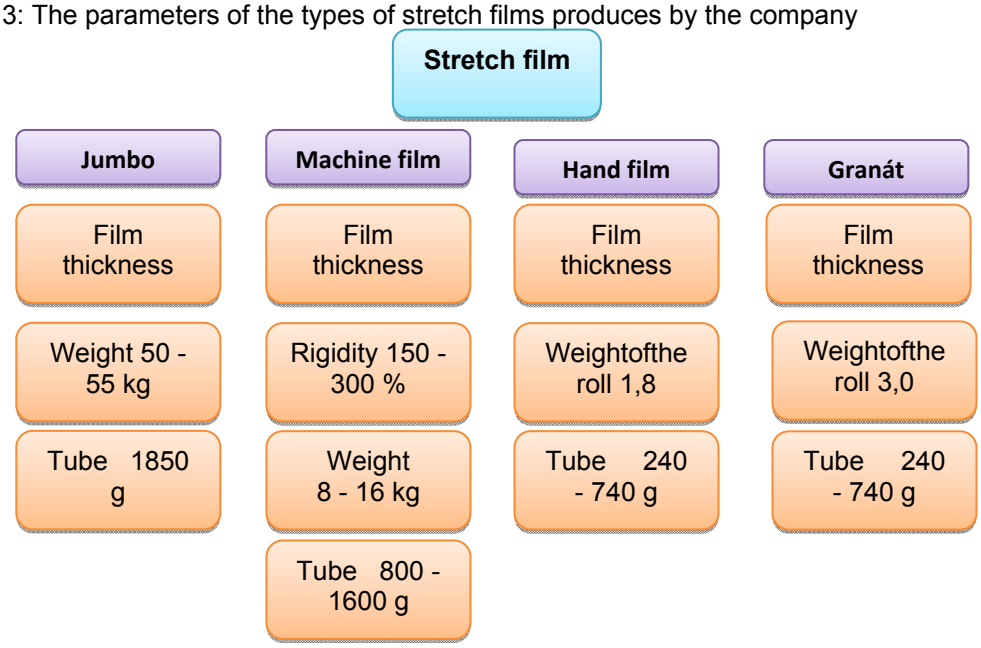
Source: Own elaboration based on Pap-Pex Slovakia, Ltd., 2016

The total number of customers of PAP-PEX SLOVAKIA, ltd. is more than 2 000 customers, including final consumers, as well as large brands as Topvar, Hyza, FM Logistics, Hella, Decodom, Gabor, Nay Elektrodom and others (Pap-pex, 2016). The company provides a full service in the field of packaging, which is expressed in the following: consulting and design of optimal packaging depending on the type and character of product packaging, flexible response to customer requirements, individual approach, quality material made of high quality materials, high tech technologies of production processes, packing costs optimization, transportation of ordered goods to the customer, tests and setting machines for machine packing.The primary goal of providing abovementioned services by PAP-PEX SLOVAKIA, ltd. is the permanent reduction of packing costs by optimizing packing processes, using suitable technological equipment and packing materials (Pap-pex, 2016). The company also provides the delivering of goods within 3 days in the Slovak Republic and transport in the European Union in cooperation with external freighter (Pap-pex, 2016). PAP-PEX SLOVAKIA, ltd. has 40 employees who are ready to fully meet all the needs and demands of their customers (Pap-pex, 2016). One of the company's main goals is research and development of films in collaboration with renowned university departments in the field of development of ecological stretch films while developing the most effective way to package goods on a pallet with stretch film. The company is the holder of the NATUR-PACK certificate for the recovery and recycling of waste from packages, papers and plastics. The company is also the holder of the Slovak productmark obtained by the companies after the proof and fulfilment of the quality criteria and the origin of the production (Pap-pex, 2016).

### 3.1 The portfolio of PAP-PEX SLOVAKIA, ltd.

The company philosophy is to be exceptional, specific and unique on the way of innovation, constant development, products testing and recipe enhancement. The mentioned philosophy is confirmed by many years of experience in purchasing materials, production and delivering. Based on the philosophy the company produces high level solutions, especially the market accessible and with a benefit for final customers (Pap-pex, 2016). Figure 3 shows a stretch film production at PAP-PEX SLOVAKIA, ltd. divided based on type of films, which are colored with purple color, such as stretch film Jumbo, machine and hand stretch film and Granát. The orange color stands for the parameters of the individual types of films, which, thanks to many years of experience, are able to adapt to the specific packaging of the film. The individual films PAP-PEX SLOVAKIA, ltd. produces in transparent or black color (Pap-pex, 2016).

Figure 3: The parameters of the types of stretch films produces by the company




Source: Own elaboration based on Pap-Pex Slovakia, Ltd., 2016

### 3.2 The application of QFD method to production process of machine stretch films at PAP-PEX SLOVAKIA, Ltd.

The QFD method was applied to the production processes of machine stretch films Flexpower 12, Flexpower 15, and machine stretch film 17 produced by PAP-PEX SLOVAKIA, ltd. and also for the competitive machine stretch film 12. The individual steps are described in more detail below.

**1. Step – The identification of the machine stretch film customer of PAP-PEX SLOVAKIA, ltd.**–priority customers of PAP-PEX SLOVAKIA, ltd. for selected machine stretch films are packaging companies, logistics centres and manufacturing companies.

**2. Step –"House of Quality" template of QFD Method** - the QFD method application was processed on a free available "House of Quality" template on an official QFD page at www.qfdonline.com.

**3. Step – The analysis of customer requirements of the company for machine stretch films** -the main five most important customer requirements of the company such as thickness, rigidity, consumption, fixation strength and tear resistance were identified in cooperation with the research team of PAP-PEX SLOVAKIA, ltd.. The above mentioned requirements are shown in Figure 4.

Figure 4: Customer requirements in the QFD method (Pap-pex, 2016)

| **Demanded Quality** (a.k.a. "Customer Requirements" or "Whats") |
|---|
| Thickness [F12 = 12 µm / F15 = 15 µm / S17 = 17 µm] |
| Rigidity (F12 = 250 % / F15 = 250 % / S17 = 250 %] |
| Consumption [F12 = 140 g / F15 = 168 g / S17 = 225 g] |
| Fixation strength [F12 = 6 kg / F15 = 6,1 kg / S17 = 6,3 kg] |
| Tear resistance [F12 = 3,3 kg / F15 = 2,3 kg / S17 = 2,5 kg] |

Source: Own elaboration based on Pap-Pex Slovakia, Ltd., 2016

As can be seen in Figure 4, the values of witch the machine stretch films meets the above mentioned requirements, listed in the following Table 1, were assigned to individual customer requirements. The values were obtained by testing based on norm ASTM D4649-03 at PAP-PEX SLOVAKIA, ltd. and also serve to competition analysis in step 4.

Table 1:The values of the machine stretch films produced by the company

| Customer requirement / film | Flexpower 12 | Flexpower 15 | Stretch film 17 |
|---|---|---|---|
| Thickness(µm) | 12 | 15 | 17 |
| Rigidity (%) | 250 | 250 | 250 |
| Consumption (g) | 140 | 168 | 225 |
| Fixation strength(kg) | 6 | 6,1 | 6,3 |
| Tear resistance(kg) | 3,3 | 2,3 | 2,5 |

Source: Own elaboration based on Pap-Pex Slovakia, Ltd., 2016

The requirements had to be evaluated numerically, or percentage, according to their importance to the customer. For the purposes of the evaluation, the supplementary Method of Pairwise Comparisons shown in Table 2 was applied.

Table 2:Determining the importance of customer requirements using the Method

| Requirement | | 1. | 2. | 3. | 4. | 5. | ∑ | $v_i$ |
|---|---|---|---|---|---|---|---|---|
| | | Thickness | Rigidity | Consumption | Fixation strength | Tear resistance | | |
| 1. | Thickness | **1** | 2 | 3 | 4 | 5 | 1 | 1 |
| 2. | Rigidity | 2 | **2** | 3 | 3 | 5 | 2 | 2 |
| 3. | Consumption | 3 | 3 | **3** | 3 | 3 | 5 | 5 |
| 4. | Fixation strength | 4 | 3 | 3 | **4** | 5 | 2 | 3 |
| 5. | Tear resistance | 5 | 5 | 3 | 5 | **5** | 4 | 4 |

Source: Own elaboration based on Pap-Pex Slovakia, Ltd., 2016

As can be seen in Table 2, numerical values of importance for the selected requirements obtained by Method of Pairwise Comparisons were as following: the thickness of the film was v1 = 1 = the rigidity v2 = 2, the film consumption obtained the highest value v3 = 5 (based on the value it is considered to be the most important customer requirement), fixation strength obtained v4 = 3 and the tear resistance was v5 = 4. In order the values could be used in the "House of Quality" of the QFD method, the values were objectively transformed to percentage to form in total 100% value. The thickness has part in total rating of 10%, rigidity of 20% fixation strength of 20%, a tear resistance of 25% and a consumption of 25%. Subsequently, the values were added to the "House of Quality" in the "Weight / Importance" column so that the values could be automatically re-calculatedto thedefined percentage evaluation in the "RelativeWeight" column as shown in Figure 5.

Figure 5: The evaluation of customer requirements in the QFD method (Pap-pex, 2016)

| Row # | Max Relationship Value in Row | Relative Weight | Weight / Importance | Demanded Quality (a.k.a. "Customer Requirements" or "Whats") |
|---|---|---|---|---|
| 1 | 9 | 10,0 | 1,0 | Thickness [F12 = 12 µm / F15 = 15 µm / S17 = 17 µm] |
| 2 | 9 | 20,0 | 2,0 | Rigidity (F12 = 250 % / F15 = 250 % / S17 = 250 %] |
| 3 | 9 | 25,0 | 2,5 | Consumption [F12 = 140 g / F15 = 168 g / S17 = 225 g] |
| 4 | 9 | 20,0 | 2,0 | Fixation strength [F12 = 6 kg / F15 = 6,1 kg / S17 = 6,3 kg] |
| 5 | 9 | 25,0 | 2,5 | Tear resistance [F12 = 3,3 kg / F15 = 2,3 kg / S17 = 2,5 kg] |

Source: Own elaboration based on Pap-Pex Slovakia, Ltd., 2016

**4. Step – Analysis of the company's competition for machine stretch films** - At this step, in cooperationwith the team in the company, the competition analysis for the selected machine stretch films Flexpower 12, Flexpower 15, machine stretch film 17 and competitive machine stretch film12was performed. The competitive analysis was performed by comparing customer requirements, which are ranged from 0 to 5. For abovementioned reason, the specific values for the fulfilment of the given requirements were written for given requirements in Step 3. Based on the values and data of the competition film collected by customer's competition testing, the competition analysis shown in Figure 6 was processed.

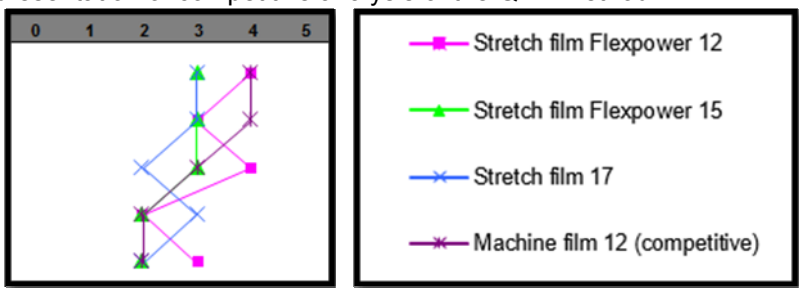
Figure 6: Competition analysis of requirements fulfilment by the company in QFD method

| Stretch film Flexpower 12 | Stretch film Flexpower 15 | Stretch film 17 | Machine film 12 (competitive) |
|---|---|---|---|
| 4 | 3 | 3 | 4 |
| 3 | 3 | 3 | 4 |
| 4 | 3 | 2 | 3 |
| 2 | 2 | 3 | 2 |
| 3 | 2 | 2 | 2 |

Source: Own elaboration based on Pap-Pex Slovakia, Ltd., 2016

Based on the values, the competitive analysis graph shown in Figure 7 was automatically generated. The figure 7 shows the comparison of the individual machine stretch films produced by PAP-PEX SLOVAKIA, ltd. compared with the competitive stretch film 12 and also the possibilities to improve the requirements.

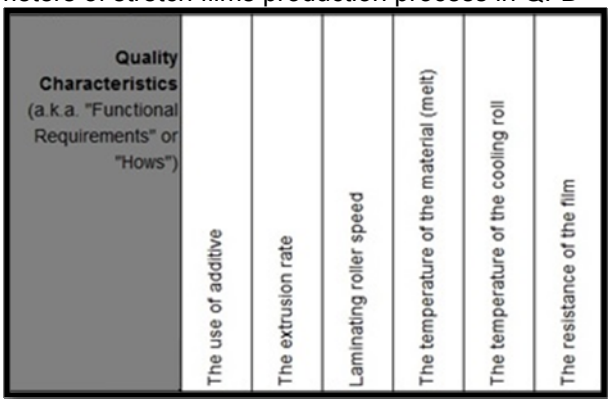
Figure 7: Graphic representation of competitive analysis of the QFD method




Source: Own elaboration based on Pap-Pex Slovakia, Ltd., 2016

**5. Step – Creation of technical parameters list of the machine stretch films production process for given customer requirements–**in cooperation with company teamtechnical parameters of machine stretch films production process were determined for which the customer's requirements have the greatest impact and the parameters were recorded in the "House of Quality" in the section "Quality Characteristics. These are technical parameters that put the accent on the used filmrecipe, extrusion rate, laminating roller speed, material temperature (melt), and coolant temperature and film resistance as shown in Figure 8.

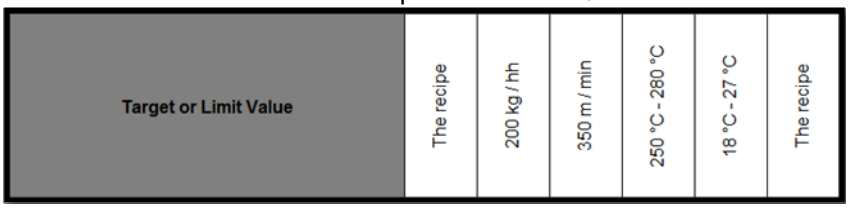
Figure 8: Technical parameters of stretch films production process in QFD




Source: Own elaboration based on Pap-Pex Slovakia, Ltd., 2016

**6. Step – Determination of the technical parameters target values of the machine stretch films production process -** the target and defining values that are necessary for the production of machine stretch films were determined for given technical parameters. The use of additives respectively granules corresponds to a recipe which is individual for each machine film. The resulting mechanical stretch films characteristics also affect the extrusion rate, which should be approximately 200 kg / hr, and the laminating roller speed, which must be 350 m / min. The temperature of the material (melt) should be between 250° C and 280° C and the temperature of the cooling roll between 18° C and 27° C, the resistance of the film depends directly on the used recipe. The specified values were entered in the "House of Quality" in the "Target or Limit Value, Target or Definitive Value" section as shown in Figure 9.

Figure 9: Target values of stretch films technical parameters in QFD method




Source: Own elaboration based on Pap-Pex Slovakia, Ltd., 2016

**7. Step –** Determination of the technical parameters directional tendency of the machine stretch films production process - To the individual target values of the given parameters from the 6.Step the directional tendencies were determined, where in addition to the laminating roller speed, mentioned above, must reach a specific value of 350 m / min. For all other technical parameters, their direction of improvement is upward as shown in Figure 10.

Figure 10: The technical parameters direction tendency in QFD method

| Column # | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| Direction of Improvement: Minimize (▼), Maximize (▲), or Target (x) | ▲ | ▲ | X | ▲ | ▲ | ▲ |

Source: Own elaboration based on Pap-Pex Slovakia, Ltd., 2016

**8. Step – The creation of relationships metrix between customer requirements and technical parameters of the machine stretch film production process –**In this step, the relationships based on the logical pairs between given customer requirements and the technical parameters of the manufacturing process of machine stretch films were created, which are graphically expressed according to the legend of the "House of Quality" and experience of the team as shown in Figure 11.

Figure 11: Relationship between customer requirements and technical parameters of the stretch films production process in the QFD method

| Quality Characteristics (a.k.a. "Functional Requirements" or "Hows") / Demanded Quality (a.k.a. "Customer Requirements" or "Whats") | The use of additive | The extrusion rate | Laminating roller speed | The temperature of the material (melt) | The temperature of the cooling roll | The resistance of the film |
|---|---|---|---|---|---|---|
| Thickness [F12 = 12 µm / F15 = 15 µm / S17 = 17 µm] | | ⊙ | ⊙ | | | |
| Rigidity (F12 = 250 % / F15 = 250 % / S17 = 250 %] | ⊙ | O | | ⊙ | O | |
| Consumption [F12 = 140 g / F15 = 168 g / S17 = 225 g] | ⊙ | | ▲ | | | ⊙ |
| Fixation strength [F12 = 6 kg / F15 = 6,1 kg / S17 = 6,3 kg] | ⊙ | O | | O | ⊙ | |
| Tear resistance [F12 = 3,3 kg / F15 = 2,3 kg / S17 = 2,5 kg] | ⊙ | O | | O | O | |

Source: Own elaboration based on Pap-Pex Slovakia, Ltd., 2016

**9. Step – The calculation of critical technical parameters of the machine stretch films production process –** Based on the relationships in 8. Step, the critical values of the technical parameters of the given machine stretch films production process were automatically calculated and displayed in the "Weight / Importance" line and "RelativeWeight" in the "House of Quality" as shown in Figure 12.

Figure 12: Critical values of the technical parameters of the machine stretch films production process in the QFD method

| Weight / Importance | 810,0 | 285,0 | 115,0 | 315,0 | 315,0 | 225,0 |
|---|---|---|---|---|---|---|
| Relative Weight | 39,2 | 13,8 | 5,6 | 15,3 | 15,3 | 10,9 |

Source: Own elaboration based on Pap-Pex Slovakia, Ltd., 2016

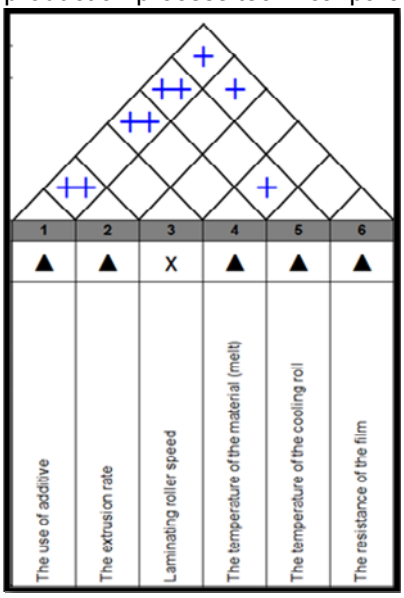
In this case, between the technical parameter - use of the additive, and hence the critical phase of the production process of the input material selection is strong relationship with a score 9 and requirement creep (rigidity) with an importance of 20 %, where the values are multiplied and the result 180 is obtained. The parameter also has a strong relationship with the requirement consumption with the importance of 25 %, i.e. after multiplying the result 225 is obtained; with the fixation strength requirement of 20 %, the result is a value of 180, and a tear resistance requirement of 25 %, with a score of 225. After counting the values 180 + 225 + 180 + 225, the resulting value 810 is given in the line "Weight / Importance" as shown in Figure 12 and present the critical parameter – use of the additive. The critical values calculated automatically in the row "Relative Weight" represent the percentage proportion of criticality between the values of all the technical parameters.For example, the percentage proportion for the technical parameter – use of the additive was calculated by dividing its achieved criticality 810 with the sum of all the critical values from the line "Weight / Importance" 810 + 285 + 115 + 315 + 315 + 225 = 2065 and the final value of 39,2 %. Simultaneously, the value is considerably higher than the values of other technical parameters, as evidenced by its criticality. Based on the achieved results the greatest attention must be paied to mentioned value. In cooperation with the company team and according the results, critical technical parameters were determined. The critical technical parameters are following:

- The use of additive – 810 / 39,2 %,

- Temperature of the material (melt) – 350 / 15,3 %,
- Temperature of the cooling roll – 350 / 15,3 %,
- Extrusion rate – 285 / 13,8 %,
- Resistance of the film– 225 / 10,9 %.

**10. Step –The expression of the correlation dependencies of the technical parameters of the machine stretch films production process** – The correlations shown in Figure 13 were expressed for the critical technical parameters of the stretch films production process in the 9. Step.

Figure 13: The correlations of the production process technical parameters




Source: Own elaboration based on Pap-Pex Slovakia, Ltd., 2016

The strong positive correlations were created between the most critical parameters - the use of the additive and the other three critical technical parameters - the extrusion rate, the temperature of the material (melt) and the temperature of the cooling roll. The positive correlations were created between the use of additive and the film resistance, the extrusion speed and film resistance and the temperature of the material (melt) and the temperature of the cooling roll.To complement the point of view of how Flexpower 12, Flexpower 15, and stretch film 17 meet the customer's requirements best in terms of all the requirements, the benchmarking method were proposed. The values of the importance of individual customer requirements from *Method*of*Pairwise Comparisons* in Table 2, together with their measurement unit in Table 1, were rewritten in Table 3 and determined the direction tendency for the given request.

Table 3:The Determination of customer demand tendency for machine stretch films

| S.n. | Requirement | Measurement unit | $v_i$ | Tendency |
|---|---|---|---|---|
| 1. | Thickness | µm | 1 | ↓ |
| 2. | Rigidity | % | 2 | ↑ |
| 3. | Consumption | g | 5 | ↓ |
| 4. | Fixation strength | kg | 3 | ↑ |
| 5. | Tear resistance | kg | 4 | ↑ |

Source: Own elaboration based on Pap-Pex Slovakia, Ltd., 2016

The Table 4 shows the results of machine stretch films comparison produced by PAP-PEX SLOVAKIA, ltd., based on mathematical calculations using the Best values method in benchmarking. The best score was obtained by the stretch film Flexpower 12 with the value 14.85 which represents the best ratio of customer requirements between the compared machine stretch films Flexpower 15 with a value 12.66 and machine stretch film 17 with a value 17.

Table 4: The machine stretch films benchmarking

| Machine stretch films benchmarking | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| j-thmachine stretch film | i-threquirement | Requirements of importance vi | | | | | Overall score$B_j$ | Final order |
| | | 5 ↓ | 4↑ | 3↑ | 2↑ | 1↓ | | |
| | | Consumption (g) | Tear resistance(kg) | Fixation strength(kg) | Rigidity(%) | Thickness (μm) | | |
| Flexpower 12 | $x_{ij}$ | **140** | **3,3** | **6** | **250** | **12** | | |
| | $a_{ij}$ | 1 | 1 | 0,95 | 1 | 1 | | |
| | $b_{ij}$ | 5 | 4 | 2,85 | 2 | 1 | **∑ = 14,85** | **1.** |
| Flexpower 15 | $x_{ij}$ | **168** | **2,3** | **6,1** | **250** | **15** | | |
| | $a_{ij}$ | 0,83 | 0,70 | 0,97 | 1 | 0,80 | | |
| | $b_{ij}$ | 4,15 | 2,8 | 2,91 | 2 | 0,80 | **∑ = 12,66** | **2.** |
| Machine film 17 | $x_{ij}$ | **225** | **2,5** | **6,3** | **250** | **17** | | |
| | $a_{ij}$ | 0,62 | 0,76 | 1 | 1 | 0,71 | | |
| | $b_{ij}$ | 3,1 | 3,04 | 3 | 2 | 0,71 | **∑ = 11,85** | **3.** |

Source: Own elaboration based on Pap-Pex Slovakia, Ltd., 2016

## 5 Evaluation of QFD method application results

The application of the QFD method for stretch film production process provided to PAP-PEX SLOVAKIA, ltd. an image what impact has the change in the importance of customer requirements on the resulting critical values of the given technical parameters, which also affected the expression of the resulting correlations between these technical parameters.

In this case, the technical parameter - the use of the additive expressed a single strongly positive correlation with the temperature of material,however the criticality of the input material selection phase, respectively the use of additives in the production process of the manual stretch films were showed repeatedly.

The statement of the CEO of PAP-PEX SLOVAKIA, ltd., and the company's technologist is very positive, and the application of the QFD method was adopted by the members of the team. The CEO of PAP-PEX SLOVAKIA, ltd. also stated that the QFD method is intend to be apply to the production process of all types of machine stretch films and stretch films for manual packaging because company currently plan to modify stretch film receipt and develop new stretch films. At the same time, he determined that the other "Quality Houses" of the QFD method will process the company's technology, because he has the most experience with the stretch film manufacturing process. Simultaneously the CEO determined that the other "House of Quality" of the QFD method will be processed by the company's technologist, according his experience with the stretch film production process. However, for mentioned purpose, an employee of PAP-PEX SLOVAKIA, ltd. modifies the "House of Quality" template to more simple and transparent template in Microsoft Excel Microsoft Office, which will represent a one-month time investment. Subsequently, the company's technologist applies the QFD

method to the production process of stretch films and stretch films for manual packaging into a modified "House of Quality" template, which will be a three-month time investment. The company's technologist inform the company's CEO about the outputs of the QFD method and consequently inform the other management members and operators of the stretch film production process.

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## Address and contact details of authors

Ing.Mário Schneider
Gefco Slovakia s.r.o.
Prílohy 44
919 26 Trnava
Ing.AugustínStareček
Ing.NatáliaHorňáková, PhD.
doc. Mgr. Dagmar Cagáňová, PhD.
Slovak University of Technology in Bratislava
Faculty of Materials Science and Technology in Trnava
Institute of Industrial Engineering and Management
J. Bottu 25
917 24 Trnava
E-mail:
xschneider.mario@gmail.com
augustin.starecek@stuba.sk
natalia.hornakova@stuba.sk
dagmar.caganova@stuba.sk

# DESIGN OF CONCEPT OF SUSTAINABLE MARKETING STRATEGY OF AN INDUSTRIAL ENTERPRISE TO INCREASE ITS SUSTAINABLE COMPETITIVENESS THROUGH THE FORMATION A POSITIVE IMAGE

**Monika Šujaková, Simona Golejová, Peter Sakál**

**Abstract**

The article discusses the use of sustainable marketing strategy of an industrial enterprise to increase its sustainable competitiveness through the formation of a positive image based on the current trends in marketing communications. The article also presents partial results of the questionnaire survey conducted at the STU MTF Institute of Industrial Engineering and Management in Trnava.

**Key Words**

Marketing Management, Sustainable Marketing, Sustainable Marketing Mix, Sustainable Communication Mix, Marketing Tools, Sustainable Development

**JEL Classification:** C44, J24, M53

## Introduction

The nature of today's globalized world determines all aspects of human action. Social reflection of unethical approaches of marketing management in the 21st century is a phenomenon challenging it to overcome the old inefficient management methods and implement the word of 'sustainability' into it.

In the past, marketing dealt with identifying and meeting customer needs so that there is a satisfied customer on the one hand, and, there is an organization that has reached the specified level of profitability on the other hand. One of the main objectives of marketing is to satisfy needs. Many authors have addressed objectives in the past and today. Professional community and also marketing managers from practice began developing social critique of marketing. Social critique of marketing emphasizes that many marketing activities are detrimental to final customers, organizations active in the market, and the whole society.

At present, attention should be drawn to the effect of various marketing activities on the environment, ecology and public health. In the past, the essence of marketing management was based on the selected strategy in the field of product distribution and many others. Different concepts of marketing management (Green marketing, sustainable marketing, environmental marketing) was preceded by a relatively massive social criticism of marketing, which points out that many marketing activities currently are damaging to the final customer, society and rival organizations (Bartáková, Gubíniová, 2012).

Sustainable development can be understood as an ideal state in which all elements of the global ecosystem are in balance, (Bussard, 2016). This new insight into the business sector is changing well-established marketing practices. In the field of business, sustainability entails managing an array of sub-problems, which include (Šmida, Hrdinová, Sakál, 2016):

- sustainable production;
- sustainable yield;
- sustainable consumption;
- sustainable marketing.

Sustainable marketing consists of the following components of sustainable marketing mix (Sakál, 2013):

- sustainable price;
- sustainable product;
- sustainable distribution;
- sustainable propagation.

Similarly to sustainable marketing mix, a sustainable communication mix includes a combination of tools (eMarketing, 2016).

Each enterprise may optionally decide on their own sustainable communication mix and the percentage of the total budget for the promotion of various communication tools (Kender, 2005).

By the questionnaire survey "Sustainable corporate social responsibility No.7", we assessed the current situation in the use of sustainable marketing communication strategy of an industrial to increase its sustainable competitiveness through the formation of a positive image based on the current trends in marketing communication. The questionnaire survey concerned the industrial enterprises established in Slovakia. We tried to point out the current situation in the use of sustainable marketing strategy in industrial enterprises in the Slovak Republic.

## 1. The questionnaire survey on "SUSTAINABLE CORPORATE SOCIAL RESPONSIBILITY NO. 7"

The questionnaire "Sustainable corporate social responsibility No. 7" consists of the following sections:

1. identification issues,
2. sustainable marketing strategy (Monika Šujaková),
3. competency approach towards human resources management (Lukáš Jurík).

Prior to the above-mentioned questionnaire survey, based on a validated methodologies developed by the STU MTF Institute of Industrial Engineering and Management Trnava, we developed a set of eight assumptions that were included in the questionnaire survey. Subsequently, I compiled the research questions and identified dependent and independent variables. The second group of questions consists of eight research questions and six additional issues in the field of sustainable marketing strategy as a tool for designing a positive image of the enterprise (Table 1).

Table 1: A set of assumptions and research questions

| **Assumption** | **Research question** |
|---|---|
| A1: More than 50% of industrial enterprises in the Slovak Republic have developed a development strategy. | RQ1: Has your company developed a strategy of development? |
| A2: Development strategy of more than 50% of industrial enterprises in the Slovak Republic is not hierarchically segmented. | RQ2: Do you have a strategy for the development of your enterprise hierarchically segmented? |
| A3: Strategy of more than 50% of industrial enterprises in the Slovak Republic is not sustainable development-oriented. | RQ3: Is your business strategy focused on sustainable development? |
| A4: More than 50% of industrial enterprises in the Slovak Republic have not their own marketing strategy for the sustainable | RQ4: Is marketing strategy of your enterprise focused on sustainable development? |

| | |
|---|---|
| development of their business. | |
| A5: More than 50% of industrial enterprises in the Slovak Republic use their marketing strategy to build a positive image of the enterprise. | RQ5: Do you use in your enterprise a marketing strategy to promote a positive image of the enterprise? |
| A6: More than 50% of industrial enterprises in the Slovak Republic do not use tools of e-marketing in marketing communications to build a positive image of the enterprise. | RQ6: Which marketing tools do you use in your company for marketing communication to promote a positive image of the enterprise? |
| A7: More than 50% of industrial enterprises in the Slovak Republic do not use tools of word of mouth marketing in marketing communications to build a positive image of the enterprise. | RQ7: Which e-marketing tools you use in your enterprise to promote a positive image of the enterprise? |
| A8: More than 50% of industrial enterprises in the Slovak Republic do not use tools of viral marketing in marketing communications to design a positive image of the enterprise. | RQ8: Which tools of the "word of mouth" marketing do you use in your enterprise to promote a positive image of the enterprise? |

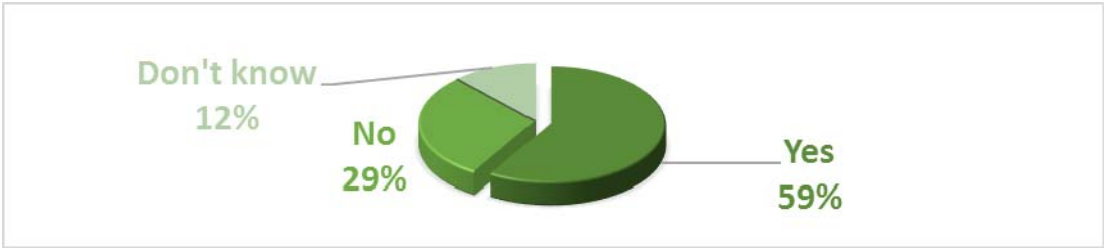
Source: Author's own processing.

The questionnaire survey was used to collect the possible greatest number of answers to questions regarding the above-mentioned subjects. For the purposes of this article, we have chosen a set of five research questions.

## 2. Results of the questionnaire survey of sustainable corporate social responsibility no. 7

The main research question (Figure 1) "Has your enterprise developed a strategy of development?", was positively responded by 59% of the total number of respondents. The negative responses were expressed by 29% of respondents, and 12% of the respondents were unable to express their opinions. The assumption "More than 50% of industrial enterprises in the Slovak Republic has developed a strategy of development." was confirmed, since majority of respondents positively stated to a given research question.

Figure 1: Answers to the question: Has your company developed a strategy of development?

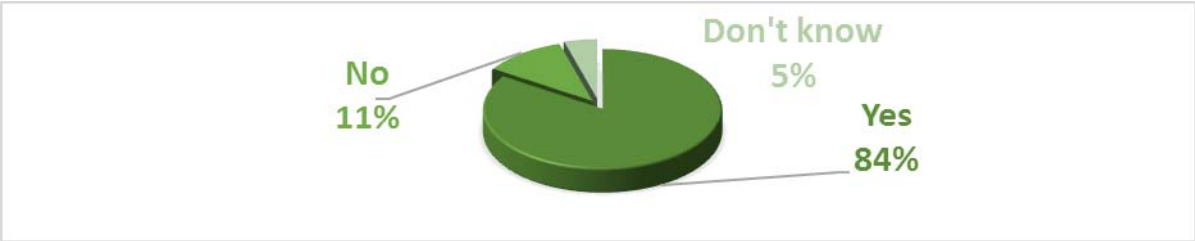



Source: Author's own processing.

The main research question (Figure 2) " Is your business strategy focused on sustainable development?", was positively responded by 84% of the total number of respondents. The negative responses were expressed by 11% of respondents, and 5% of the respondents were unable to express their opinions.

Assumption "Strategy of more than 50% of industrial enterprises in the Slovak Republic is not sustainable development-oriented." was confirmed, since majority of respondents positively stated to a given research question.

Figure 2: Answers to the question: Is your corporate strategy focused on sustainable development?

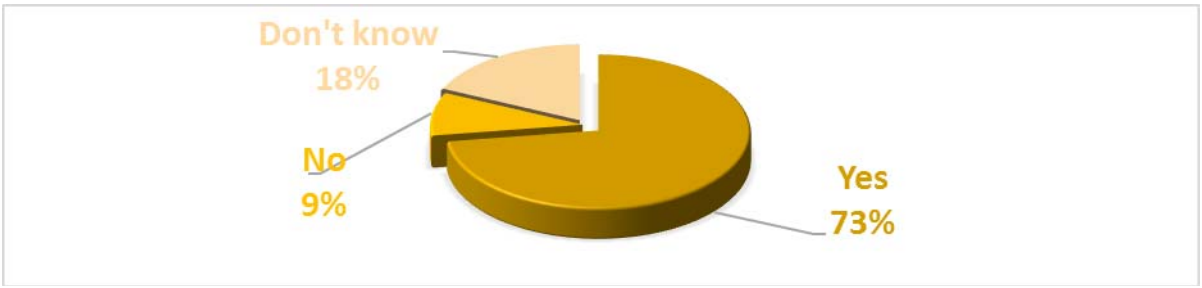



Source: Author's own processing.

The research question (Figure 3) “Is marketing strategy of your enterprise focused on sustainable development? “, was positively responded by only 44% of the total number of respondents. From this number of respondents, only 73% of respondents use marketing strategy focuses on sustainable development. 9% of respondents said that although the company's marketing strategy had, but it has not oriented on sustainable development. 18% of respondents were unable to express their opinions.

Assumption “More than 50% of industrial enterprises in the Slovak Republic have not their own marketing strategy for the sustainable development of their business.”, was confirmed since majority of respondents positively stated to a given research question.

Figure 3: Answers to the question: Is marketing strategy of your enterprise focused on sustainable development

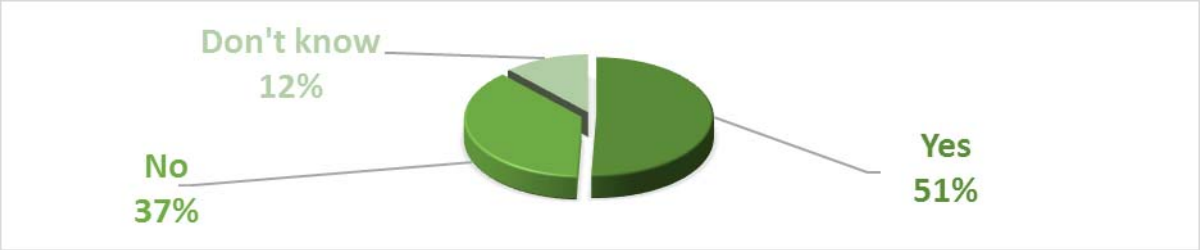



Source: Author's own processing.

The research questions (Figure 4) “Do you use in your enterprise a marketing strategy to promote a positive image of the enterprise?”, was positively responded by 51% of the total number of respondents. The negative responses were expressed by 37% of respondents and 12% of the respondents were unable to express their opinions.

Assumption “More than 50% of industrial enterprises in the Slovak Republic use their marketing strategy to build a positive image of the enterprise." was confirmed, due to the fact that 51% of respondents positively stated to a given research question.

Figure 4: Answers to the question: Do you use in your enterprise a marketing strategy to promote a positive image of the enterprise?

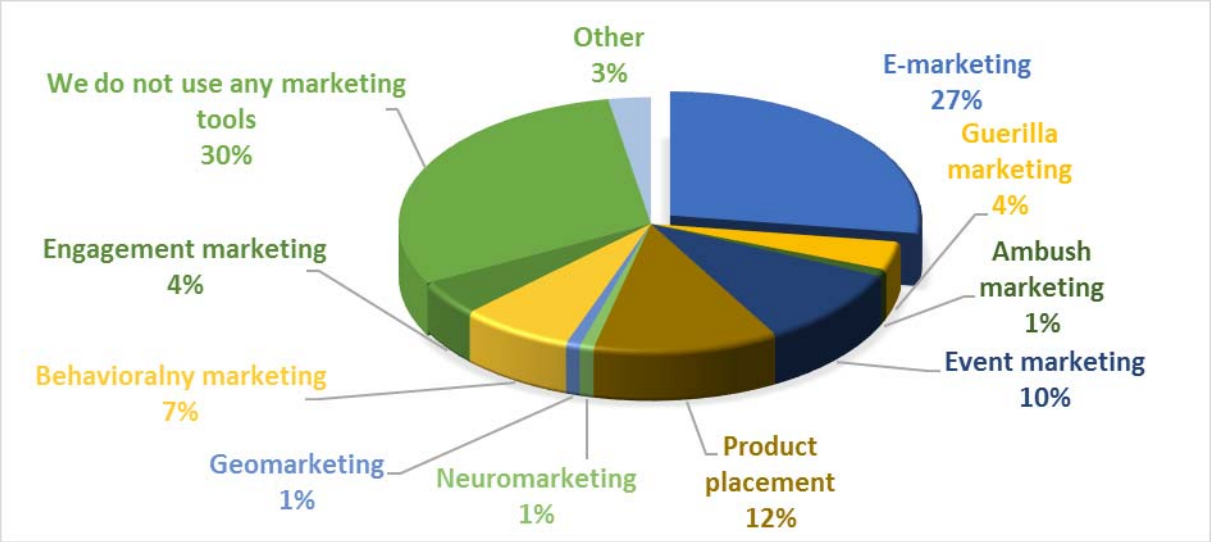



Source: Author's own processing.

The research question (Figure 5) “Which marketing tools do you use in your company for marketing communication to promote a positive image of the enterprise? “, shows that 30% of respondents using any marketing tool. 70% of respondents use at least one or more marketing tools in marketing communications. (Internet marketing 27%, product placement 12%, event marketing 10%, behavioral marketing 7%).

Assumption "More than 50% of industrial enterprises in the Slovak Republic do not use tools of e-marketing in marketing communications to build a positive image of the enterprise." was confirmed due the fact that only 27% of respondents use e-marketing tools.

Figure 5: Answers to the question: Which marketing tools do you use in your company for marketing communication to promote a positive image of the enterprise?




Source: Author's own processing.

## Conclusion

The paper aimed to highlight the current situation in the use of sustainable marketing strategy in industrial enterprises in the Slovak Republic. The results of the questionnaire survey shows that most industrial enterprises in Slovakia does not have marketing strategy focused on sustainable development and does not use the new trends in marketing communications to strengthen the positive image of the company enough.

The aim of this article was to give my critical view of the use of sustainable marketing strategy to increase the competitiveness of industrial enterprises in the Slovak Republic and their positive image through the use of new trends in marketing communications.

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## Adress and Contact authors

Ing. Monika Šujaková

prof. Ing. Peter Sakál, CSc.

Ústav priemyselného inžinierstva a manažmentu
Materiálovotechnologická fakulta STU
Jána Bottu 25
917 24 Trnava
E-mail:
m.sujakova@is.stuba.sk
peter.sakal@stuba.sk

# GREEN ECONOMY AND CORPORATE SOCIAL RESPONSIBILITY IN THE PROMOTION OF SUSTAINABLE DEVELOPMENT

**Tamara Uskova, Ekaterina Kopytova**

**Abstract**

The article is devoted to one of the most urgent issues, that is, the issue of ecological component of economic activity which should be viewed as one of the aspects of corporate social responsibility. Special attention is paid to the relevance of the transition to green economy. The paper offers a list of the most important objectives, the solution of which will help the Russian economy implement the principles of green economy and shift to the model of sustainable development.

**Key words**

Sustainable development, environmental issues, green economy, green economy, socio-environmental responsibility.

**JEL Classification: M14, O13, Q 20**

## Introduction

In the late 1980–s – early 1990–s, the UN formulated conceptual approaches to the development of the society and economy – a model of sustainable development. In the 21st century, the issue of sustainable development remains one of the most acute. A major UN Conference on sustainable development held in June 2012 in Rio de Janeiro ("Rio+20") acknowledged the results of the past two decades disappointing: the negative trends still remain and are even intensified. This was mostly the result of widespread misconceptions about the feasibility of raising attention to the environment only after addressing basic economic issues: "first – economy, then – environment; environment is the lot of developed countries".

It should be noted that sustainable development is a process of change where resource exploitation, direction of investments, focus of technological development in harmony with social welfare and ecological balance enhance the value of the current and future potential [1].

## 1. Importance and urgency of the problem of environmental pollution

Sustainable development is often equated with GDP growth, maximization of profit, financial flows and other financial indicators; the quality of growth and its costs, especially environmental and social, are neglected. The pursuit of economic growth dramatically increases the burden on the environment. Ignoring the environmental issues not only undermines the ecosystem sustainability, but also leads to negative consequences for human health. According to forecasts of the Organization for Economic Cooperation and Development (OECD) [2], by 2060, air pollution can become the cause of premature death for 6–9 million people and result in the annual loss of $ 2.6 trillion which corresponds to 1% of GDP. This will cause the most severe consequences for the economies of China, Russia, India, South Korea, Eastern Europe and the Caspian region. At the same time, the problem of air pollution is not reducing. 2/3 of all air pollutants' emissions accounts for Western developed countries. The major pollutants include particulates, sulfur dioxide, nitrogen oxides and carbon monoxide, including carbon dioxide. According to the International Energy Agency (IEA) [3], the greatest amount of carbon emissions is produced by China, the US, the EU and India. This is reflected in data on carbon dioxide emission dynamics in world's major countries (tab. 1).

Table 1. Carbon dioxide emission dynamics in world's largest countries, %

| Country | 1990 | 2013 | Change, p.p. |
|---|---|---|---|
| EU-28 | 19.5 | 10.4 | -9.1 |
| USA | 23.3 | 15.9 | -7.4 |
| Russia | 10.5 | 4.8 | -5.7 |
| Japan | 5.1 | 3.8 | -1.3 |
| India | 2.6 | 5.8 | +3.2 |
| China | 10.7 | 28.0 | +17.3 |
| Other countries | 28.3 | 31.3 | +3.0 |

High concentration of carbon dioxide in the atmosphere is one of the causes of climate change. As a result the negative impact of the greenhouse effect is increasing, the ice is melting, and sea level is rising. The changing climatic conditions are a driver of geopolitical transformations. The depletion of natural hydrocarbons is forcing world powers to import energy resources and is a cause of many armed conflicts between countries [4].

In addition to air pollution and climate change, at the present stage of development, the global community is facing global environmental changes such as land pollution, soil cover destruction; fresh water depletion and world's oceans' pollution; ozone layer destruction; biological diversity depletion, etc.

In this regard, finding ways to reduce the burden on the environment and shift to the model of sustainable development is of particular relevance.

## 2. Role of green economy in the promotion of sustainable development

The basis for the transition to sustainable development may be the development of "green" economy. According to the reports of the UN Environment Program (UNEP) [5], in the framework of "Rio+20" green economy is defined as the economy which improves population's welfare and ensures social justice thus significantly reducing environment risks and environment deterioration prospects. The most important features of such an economy are: efficient use of natural resources, natural capital preservation and increase, reduction in pollution, low carbon emissions, prevention of ecosystem service and biodiversity loss, income and employment gains.A socially responsible business plays the most important role in the protection of the environment [6]. The responsibility for the harm caused by business was noted in the reports of the UN Conference on this issue (the 1972 Stockholm Conference).

Many countries are actively developing their anti-crisis programs which are mostly focused on the environmental component. The G20 members allocate nearly 16% (522 billion dollars) out of 3.3 billion dollars aimed at introducing measures of economic stimulation to "green" investments [7]. According to the HSBC study [8], the environmental component in the anti-crisis package of measures amounted to: 8–13% in the US, Canada and Germany, 21% – in France, 38% – in China, 81% – in South Korea. According to US Act "On recovery and reinvestment of the American economy" adopted in 2009, Federal government should invest 90 billion dollars to promote innovation and growth in green business, technology, energy efficiency, and increase the number of "green" jobs [9]. Scandinavian countries implement radical restructuring of the economy in favor of industries producing environmentally compatible new technology, products and services. In a crisis, such restructuring is implemented through government support for environmentally advanced activities with minimal support for traditional industries. It is assumed that the multiplier effect of the green industry is 8–10 times higher than that of other industrial sectors [10].

As for the Russian Federation, the formation of the concept of green economy is of crucial importance. Prime Minister of the Russian Federation D.A. Medvedev who represented Russia at the UN conference in Rio de Janeiro (2012) emphasized that "...Society, economy and nature are inseparable. That is why we need a new development paradigm able to ensure social welfare without excessive pressure on nature. The interests of economy, on the one hand, and nature preservation, on the other hand, should be balanced and long-term. It is also necessary to ensure innovative and energy-efficient growth of the so-called "green" economy which is useful for all countries..." [11].

Currently there is the legal base of green economy in the Russian Federation. The President of the Russian Federation approved the Principles of state policy related to environmental development of the Russian Federation for the period up to 2030. The Water strategy of the Russian Federation was adopted for the period up to 2020; the Energy strategy of Russia for the period up to 2030, the Climate doctrine of the Russian Federation, the Strategy of activities in hydrometeorology for the period up to 2030 (considering the aspects of climate change),and the Concept of development of specially protected natural reservations of federal significance for the period up to 2020.

## 3. Russian experience of social and environmental responsibility of business

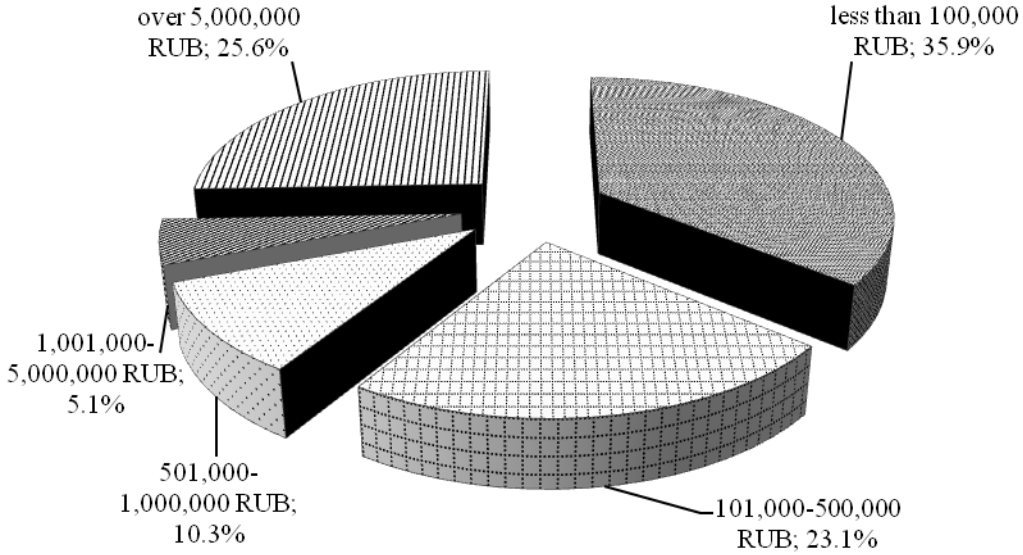
At the end of December 2016, Russian President Vladimir Putin held a State Council session on “Environmental development of the Russian Federation in the interest of future generations”. The Russian President also stressed that “2017 is declared the Year of environment, and the environmental area is considered a priority in the recently approved Strategy for scientific and technological development of Russia”.

The list of activities planned for implementation in 2017, is scheduled in the decree of the Government of Russia No. 2720-p. In particular, national events will be held in every region (meetings, exhibitions, festivals and competitions); as well as numerous volunteer conservation programs ("100 good deeds for wildlife of Russia"), contests of drawings, production of souvenir products, etc.; a number of television and radio reports will be launched, relevant columns will appear in popular science periodicals (in “National Geographic”, “Vokrug Sveta” (“Around the World”), “Geo”, “PrirodaiChelovek 21 Vek” (“Nature and Man, 21st Century”), etc.

Total funding for the implementation of these events will amount to 347 billion rubles, including the largest share (55%) from extrabudgetary sources, fundings of business entities among them [12].

At the same time, according to the survey of the Russian Union of Industrialists and entrepreneurs (RSPP) “Social responsibility of business in the environmental field”, 25.6% of the interviewed business entities spend more than 5,000,000 RUB per year on environmental programs (not taking into account mandatory legal requirements). Almost a quarter of companies (23.1%) spend on environmental programs from 101,000 to 500,000 RUB of their budgets, and 10.3% - between 501,000 and 1,000,000 RUB. Remaining 35.9% of respondents direct their financing to environmental programs in the amount of less than 100,000 RUB; and 5.1% of respondents chose the option "the company spends from 1,001,000 to 5,000,000 RUB” (Figure).

Figure. The annual budget of Russian companies on environmental programs (not taking into account mandatory legal requirements)




Source: [13].

At the same time, a formalized environmental policy (in the form of a strategy, medium or long-term plan or some other strategic document) exists in 62.7% of the companies surveyed.

When asked, "Which of the following measures are included in the environmental policy of your company?" economic entities could give more than one answer (tab. 2). The results indicate that:

– 15.6% of companies with the adopted environmental strategy have 10 or more measures proposed in the questionnaire;

– 50% of companies - from 5 to 9 elements in the strategy from the list proposed;

– 34.4% of companies - from 3 to 5 environmental policy measures.

Table 2. Environmental policy measures of economic entities, % of the number of respondents

| Answer option | % of the number of respondents |
|---|---|
| Implementation of new technologies, equipment, and materials in order to increase energy efficiency and as a result reduce the negative impact on the environment | 78.1 |
| Operating monitoring of environmental indicators showing the impact of company's activity on the environment, current environmental supervision | 65.6 |
| Landscape gardening | 65.6 |
| Improving industrial and environmental safety of hazardous facilities | 59.4 |
| Personnel training: environmental training, emergency response drills | 56.3 |
| Air protection measures aimed at decrease in hazardous emissions | 50.0 |
| Waste sorting and waste utilization programs | 50.0 |
| Planning and implementation of measures for preventing environmental accidents | 50.0 |
| Sound environmental measurement, a continuant reduction in the volume of natural resources consumption per unit | 40.6 |
| Implementation of measures to reduce discharges of pollutants into underground and surface water bodies; recultivation of disturbed soils | 40.6 |
| Multipurpose utilization of secondary resources | 34.4 |
| Preservation of species diversity and ecosystem productivity in the region where a company operates | 9.4 |
| Encouragement of environmental volunteering, including corporate personnel | 6.3 |
| Support of non-profit organizations involved in environmental issues | 6.3 |
| Other | 3.1 |

Source: [13].

Environmental policy of economic entities in 78.1% of cases contains a paragraph "Implementation of new technologies, equipment, and materials in order to increase energy efficiency and as a result reduce the negative impact on the environment". Formal environmental policy of 65.6% of companies includes operating monitoring of environmental indicators showing the impact of company's activity on the environment, current environmental supervision, as well as landscape gardening. 59.4% of respondents indicated that the environmental policy of the company implies improving industrial and environmental safety of hazardous facilities. Slightly fewer of respondents (56.2%) chose the answer option "Personnel training: environmental training, emergency response drills".

Environmental policy at 40.6% of companies involves sound environmental measurement, a continuant reduction in the volume of natural resources consumption per unit, implementation of measures to reduce discharges of pollutants into underground and surface water bodies, recultivation of disturbed soils. More than 1/3 of respondents (34.4 %) chose the answer "multipurpose utilization of secondary resources".

In 22.9% of the companies some environmental projects are part of comprehensive programs on corporate charity and social investment. These companies clearly defined their environmental projects: landscape gardening, discharge treatment, clean-up events.

One of the promising areas of responsible environmental behavior of business entities, based on foreign countries experience, is the implementation of environment management system [14, 15]. At the same time, environment management does not revoke or replace state administrative environment regulation, carried out at the federal and regional levels, but only complements it, being an independent initiative of the enterprise. The author of the study [16] points out that managers at any level of administration play an indispensable role in promoting sustainable development of industrial enterprises. It is therefore necessary to create “new” models of competencies, which will aim, among other things, to protect the environment, which will contribute to sustainable development.

The survey on Russian companies shows that the international standards of "Environmental management systems – Requirements with guidance for use "(ISO 14001: 2004) have been implemented in 17.4% of respondent companies and are being implemented in 15.2%. One third of the companies participated in the survey plan to undergo certification in the near future.

At the same time, a number of economic entities not only implement environmental projects, but also encourage their employees to participate in environmental programs, and also stimulate the development of this part of social responsibility:

– 50% of the companies surveyed send their employees on thematic trainings and refresher courses;

– in 40% of the companies the most active participants in environmental programs receive commendations from the management;

– more than a quarter of the companies give a bonus to such employees;

– 16.7% of the companies place photos of the distinguished employees on the honors board and send e-mail letters with their names;

– 13.3% of the companies reward employees with badges of honor;

– 13.3% of the companies arrange meetings of the most active participants in environmental programs with company executives;

– one tenth of the companies grant the employees who participated in environmental activities with a compensatory leave.

## Conclusion

Thus, economic entities are taking active part in the implementation of the tasks of Russia’s environmental development. In this situation it is very important to use and expand public authorities tools in order to encourage responsible environmental behavior by business entities.

Within the framework of the current economic policy, it is advisable to provide state support for enterprises introducing clean technologies. The following tools of such support can be applied:

– targeted tax benefits, including deferment of tax;

– income tax decrease by the amount that enterprises plan to invest in the greening of their production;

– decrease of the value added tax rates in the purchase of new technological equipment that meets modern environmental requirements;

– tax exemption of certain categories of taxpayers who carry out the environmentalization of production;

– administering the practice of accelerated capital allowances of ecological purpose and clean equipment [15].

Investing in resource-saving structural reconstruction of economy radically changes its technological base, ensuring its environmentalization, sustainability and reduction of nature intensity, thereby minimizing environmental risks, costs of eliminating negative environmental consequences of industrial economic development in the future.

In conclusion we should point out that green economy and the socio-environmental responsibility of business based on it should be considered a framework for transition to sustainable development. This very model, based on the greening of economy, has a substantial potential, and the development of this model can provide a synergetic effect for sustainable socio-economic development of territories.

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## Address and contact details of the authors

Uskova Tamara Vital’evna, Doctor of Economics, Deputy Director, Department Head.
Department of the Problems of Socio-Economic Development and Administration in Territorial Systems
Institute of Socio-Economic Development of Territories of Russian Academy of Sciences
56a, Gorky Street, Vologda, 160014, Russia.
Phone: +7 8172 59-78-06
E-mail: tvu@vscc.ac.ru

Kopytova Ekaterina Dmitrievna, Ph.D. in Economics, Research Associate.
Sector of Research of the Problems of Administration Efficiency of Socio-Economic Systems
Department of the Problems of Socio-Economic Development and Administration in Territorial Systems
Institute of Socio-Economic Development of Territories of Russian Academy of Sciences
56a, Gorky Street, Vologda, 160014, Russia.
Phone: +7 8172 59-78-10
E-mail: ekaterina-razgylina@yandex.ru

# INTERREGIONAL COOPERATION AS A FACTOR IN REGIONAL INDUSTRIAL DEVELOPMENT

**Tamara Uskova, Evgenii Lukin**

**Abstract**

The article discusses issues to develop interregional economic cooperation of regions. Strengthening of interregional relations as an important factor in the development of industrial production of the region is considered as the main hypothesis of the study. The authors developed methodical tools to boost interregional cooperation. The paper suggests a methodological approach to forecasting regional industry development with regard to changes in the country's economy in connection with the planned modernization activities and the implementation of major investment projects, as well as the possible associated growth in regional supplies of regional industrial enterprises. The approach is based on principles of the general equilibrium theory, a balance method «input-output» and a methodology of the national accounts system. The paper defines long-term goals, objectives and directions of interregional cooperation development in the region.

**Key words**

Industry, region, interregional cooperation, prospects, development directions, mechanism, regulation, methodological tools, forecasting, input-output balance.

**JEL Classification:** E27, O14, P23

## Introduction

Addressing a most urgent task concerning regional industrial development makes it necessary to search for sources of its growth. Regional integration based on the development and enhancement of economic interaction of Russian constituent entities is one of these sources. Interregional economic interaction provides the market with goods that are not produced in the region and local producers – with sustainable supply of raw materials and components; this interaction boosts the development of the internal market of goods and enhances domestic demand for products.

At the same time, the interregional relationships that had existed within the country and between former USSR republics were almost completely destroyed in the course of economic reforms that Russia went through. The significant decline in economic activity and the production decreaseled to a deep economic recession in the regions and the country in the mid-1990s, which, in turn, resulted in sharp deterioration in the welfare of the population [4].

The majority of economists and politicians recognize the fallacy of the current policy, and the need to strengthen the regulatory role of the government,among other things, with regard to the development of interregional cooperation. Meanwhile, regional public authorities do not pay due attention to these issues. The mechanisms of these bodies' influence on the economic entities that generate interregional flows of goods and services are used rather insufficiently. The impact of regional cooperation on industrial development is not estimated. The regional laws directed on the development of interregional economic interactions do not provide for specific methods and levers to stimulate them [10]. The elaborated forecasts of socio-economic and industrial development do not consider strengthening of interregional ties properly.

In view of the above, the development of methods for their activation as one of the effective factors in industrial development of the region comes to the fore as an important task.

## 1. Role of interregional cooperation in regional industrial development

Interregional ties play an important role in the development of industry in the regions The reproductive approach to economy management proves that production needs economic resources not only available in the region but also imported from other regions; besides other territories should have a demand for the products manufactured in this region [23]. This leads to the dependence of each region on interregional economic integration and makes economic cooperation between them an essential factor in their industrialdevelopment. The importance of interregional cooperationdevelopment is confirmed by several scientific theories.

The fundamentals of the theory of interregional cooperation were laid in the 18th century in the theory of absolute and comparative advantage (A. Smith, D. Ricardo), the essence of which consists in the idea that some countries (regions) can produce goods more efficiently and at a lower price than others and on this basis they have an absolute advantage implemented through trade [18]. The classical theories of accommodation such asJ.H.von Thünen's location theory, W. Christaller's central place theory, and V. Launhardt and A. Weber's industrial location theory made a significant contribution to the development of the theory of interregional cooperation. The location theories became the basis for the formation of the majority of modern spatial theories of development [34], which began to develop rapidly in the 1930s. According to economic geography theories (represented mainly by Soviet scientists: N.N. Baranskii, N.N. Kolosovskii, M.K. Bandman, etc.), strengthening of interregional economic interaction is a driving force of regional competitiveness because itpromotes technological specialization, cooperation and agglomeration effect [17].

In general, it is proved the wealth of population in different territories is based on the division of labor and subsequent exchange of its results; the sources of economic specialization in a given territory are spatial growth, uneven allocation of resources, and growing competition; there is a direct correlation between the efficiency of allocation of production factors (territorial and sectoral organization of the economy) and performance.

In the mid-twentieth century, economists revised thefactors that determine the direction and pattern of trade flows between countries and regions. E. Heckscher and B. Ohlin supplemented the theory of comparative advantage, putting forward the theorem of "equalization of prices of production factors", according to which each country country (region) exports those goods, for the production of which the total value of all costs is lower than in other countries (regions), and their salesbring profit. P. Samuelson and W. Stolper further elaborated thistheorem: in case of homogeneous production factors,perfect competition, identical technologyand complete mobility of goods exchange trade equalizes the price of production factors between countries (regions). Trade is not only considered as mutually beneficial exchange, but also as an instrument to reduce development disparities between territories.

The second half of the 20th century witnessed the emergence ofcompetitive advantage theories for individual territories due to grown world trade and increased competition between countries and regions. M. Porter identified consistent patterns in competition between areas: the more developed competition in the domestic market, the greater the likelihood of success of this country (region) on international markets [6]. To achieve the competitiveness of countries and regions with a production factors deficit, according to P. Krugman is possible through the use of special forms of production organization and concentration [7, 8]. This thesis was elaborated in cluster development theories and concepts (M. Porter, M. Enright, J. Humphrey, H. Schmitz, and M. Storper). They studied the structure and forms in which economic activities were organized in space (vertically and horizontally integrated organizations, clusters, networks), drivers of competitiveness of economic agents, ways of their interaction [9].

Russian scientists made great achievement in the issues ofdevelopment of interregional cooperation between territories. During the Soviet era, their research was aimed to solve the problem of rational territorial organization of economy and find methods for planning and regulating economic development. V.S. Nemchinov, A.E. Probst, R.I. Shniper, A.G. Granberg are among the most prominent domestic researchers engaged in regional studies. A.I. Tatarkin [19-21], S.Yu. Glazyev [3], P.A. Minakir [11], O.A. Romanova [15], R.A. Latypov [8], I.M. Rukina [16], and K.V. Pavlov [13] carried out their

research on the formation and development of interregional economic relations, coordinated functioning of regions in the major economic areas (i.e. federal districts) under modern Russian conditions.

However, many aspects of the methodology for the formation of regional policy in the sphere of interregional relations and methods of its implementation still do not have sufficient scientific substantiation. They include critical issues such as linking the regional component to the national policy,defining state support priorities, the sequence of implementation of program activities in the regions, coordinating their implementation in economic sectors.

## 2. Methodological bases of development of interregional cooperation of the region

The general logic of boosting interregional economic interaction as a factor in industrial development of the region involves three main interrelated steps: information-analytical, target, and implementation.

The information-analytical step involves collecting, systematization and analysis of the materials that form the information base for the development of interregional cooperation.In our opinion, the range of issues dealt with at this stage should include: assessment of the current state, main trends and regularities in the development of interregional relations; analysis of industrial market environment in the region; identification and systematization of prerequisites for, limitations on and problems in the development of interregional links.

The diagnostics of the current state of interregional relations of the region and their development trends is carried out with the help of an extensive range of various methods and approaches: comparison;bringing the indicators to a comparable form; application of relative and average values [17]; grouping of information; factor, correlation, multivariate comparative analysis methods [18; 19]; expert diagnostics methods [20], and others. For the purpose of analyzingthe situation on the industrial market in the region, taking into account the capacity of regional statistics, one uses the indicators that characterize the direction, structure and volume of supply and demand for the products of intraregional, interregional and foreign markets [21].

The target step defines possible solutions to the problems of interregional relations of the region, sets out the targets and tasks of development of interregional cooperation (taking into account national objectives and regional tasks of industrial development), highlights priorities in this sphere, and calculates the possible consequences of their implementation.

Methods used in SWOT and PEST analyses can serve as a methodological basis at this stage. In order to highlight the purposes, tasks and directions of development of interregional cooperation of the region, the methodological approach [22; 23] can be used; it is based on the construction of matrices that showthe prospects of development of interregional trade and economic cooperation of the region on the basis of portfolio analysis methodology. This approach will help diagnose the status of interregional relations, develop a system of differentiated areas of their development in the context of groups of consumer regions and goods supplied.

To determine potential opportunities for increasing the interregional export of products of industrial enterprises of the region, we use the following algorithm [2]:

– analysis of the region's industrial complex (structure, manufactured products, production volumes);

– evaluation ofstrategic documents of different level in terms of participation of the region's enterprises in them (as suppliers of products and modernization objects);

– definition possibilities and contractors for supplies;

– assessment of potential increase in the volumes of interregional export.

The change in the industrial production output in the region taking into account interregional supplies can be assessed with the help of input-output models [1; 24; 25]. In particular, they give the opportunity to calculate the amount of the x output in all sectors of the regional economy in case of the

change in the y final demand. Based on the data of the table of goods and services usage theA matrix of direct costs of the product/industrytype is calculated. Then on the basis of the data presented in the table of resources of goods and serviceswe calculate the W correction matrix of the industry/product type. Then we calculate the A·W symmetric matrix of direct costs of theproduct/product type and the symmetric matrix of total costs:

$$B = (E - A \cdot W)^{-1}. \quad (1)$$

The element $b_{ij}$ of the B matrix characterizes the demand for the gross output of the industry i, which is required to obtain a unit of the final product of industry j. in the process of material production This enables us to consider the gross output of industries $x_i$ as a function of the planned values $y_j$ of the final products of industries:

$$x_i = f(y_1, y_2, ..., y_n) = \sum_{j=1}^{n} b_{ij} y_j . \quad (2)$$

By multiplying the matrix of total costs of the product/product type and the vector of final consumption (y) we calculate the volume of commodity output for each product produced in the economy:

$$x = (E - B \cdot W)^{-1} \cdot y. \quad (3)$$

Based on the matrix dependencies obtained, we can estimate the volume of production in all industries in the region, at a forecasted growth of demand forproduced goods in other regions.

The implementation stage focuses on the formation of a mechanism for the implementation of activities in the field of interregional cooperation and includes a specific set of applicable tools that are selected in accordance with the current conditions and opportunities of public administration.

The analysis of approaches to this issue [26; 27] helpsmake a typology of the tools for implementing the policy in the sphere of interregional cooperation according to several features (spatial, orientation of impact of the objects,nature of the impact of objects, content function of control method). With regard to the regional level, in our opinion, one can use the classification based on the substantial function of policy implementation methods in the sphere of interregional cooperation: resource methods (direct financing; economic regulation (instruments of tax, credit, foreign trade policy, state regulation of prices and tariffs), institutional methods (legal regulation; administrative-economic regulation; development of property relations; development of new organizational and legal forms), information methods (monitoring of the region's industrial development; evaluation of options and prospects of functioning of branches; development of recommendations), program-target (programs for development of interregional relations; program for development of branch-wise complexes; programs addressing individual problems in their development).

Thus, the algorithm to boost interregional economic cooperation as a driver of economic development in the region can be represented as a diagram that consists of three phases: information-analytic, target and implementation. This algorithm was tested on materials of the Vologda Oblast(Russia).

## 3. Interregional economic cooperation as a factor in the development of regional industrial enterprises

The search of the sources to develop the manufacturing sector is a key challenge for industrialized regions, such as the Vologda Oblast. Industry in the Vologda Oblast is a diversified complex that producescritically important products for the national economy: 17.7% of the national output of rolled ferrous metals; 7.5% of synthetic ammonia; 6.9 % of lumber; 6.6% of steel pipes; 2% – of whole milk products. The industry branches form over 38% of gross regional product, about 26% of the workforce employed in the economy, and almost 40% of tax revenues in budgets of all levels.

Interaction with other regions is of great importance for the work of the regional industry. The results of the survey of managers of large and medium industrial enterprises of the Vologda Oblast that we conduct on a regular basis show that the vast majority of enterprises (94%) cooperate with Russian regions. Cooperation is effected mainly in the form of trade: sales of ready products (79%), supply of raw materials (61%), and purchase of raw materials (21%). Advanced forms of cooperation such as industrial cooperation (20%), technology transfer (14%), investment activity (12%) and involvement of specialists from other regions (9%) are used not so widely.

The significant part of goods produced by the Vologda Oblast industry is sold on the domestic market. High dependence on markets of other Russian regions is typical of the production of steel pipes (81% in the total amount of supplies), rolled ferrous metals (44%), timber (40%), and dairy products (38%).

The amount of products that the region sells to otherRussian regions considerably exceeds the amount it purchases: export exceeds import in 1.5–2 times (in the pre-crisis years – in 2.5 times). In recent years, the interregional commodity turnover of the Vologda Oblast shows a negative trend. Products used for industrial and technology purposes form the basis of commodity turnover (from 82 to 90% in different years). Interregional relations of the Vologda Oblast are based mainly on resources; moreover, in its export there is a strong monostructural aspect – 80–85% of export is formed by metallurgical products of low processing stages.Products of chemical and timber sectors, and food products of dairy and beef cattle breeding are other important items of supply. The recent-year trend is to reorient the supplies of the region's industrial enterprises from external to internal markets. It is typical ofindustrial timber, lumber, paper, rolled ferrous metals, and steel pipes. Mineral fertilizers are an exception here, their share of regional supplies decreased slightly.

However, the capacity for interregional cooperation is not used fully. The main problems that hamper the development of interregional trade and economic activities in the Vologda Oblast and do not allow its potential to be used for the purposes of industrial development include the following.

1. Unbalanced industry structure. The years ofreforms did notwitness any positive changes. In 2014, the share of production of machinery and equipment in the total volume of shipped products was only 4.5%, whereas the share of metallurgical production was 56%.

2. A high degree of obsolescence and physical depreciation of industrial assets. The wear rate in the whole industry was 45.9% in 2014.

3. A narrow range of products the Vologda Oblast exports, which is based on a small group of goods with a low degree of processing. The oblast is represented in the national market mainly by raw materials and products of low processing. It becomes the reason why the regional economy is vulnerable to external shocks.

The development of the region's industry largely depends on the changes in the situation on the domestic and foreign markets. The development of the industrial sector of economy in the Vologda Oblast and in Russia as a whole is characterized by a negative trend associated with the compression of the current commodity markets due to several reasons. First, the markets sank sharply after the 2008–2009 global financial crisis. Second, there was a significant drop in prices for basic goods exported by the Vologda Oblast (rolled steel and fertilizers). Third, there was a significant reduction in the Russian domestic market of consumer goods that occurred due to the influence of several factors –loss of

people's savings as a result of significant inflation and reduction in current incomes due to production recession and increase in the scale of non-payment.

These factors resulted in reduced demand andslower growth or decline in production in virtually all the interrelated sectors of the region's industrial complex (tab. 1).

Table 1. Index of physical volume of production inkey branches of industry in the Vologda Oblast, % to the previous year*

| Industry | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2014 to 2008, % |
|---|---|---|---|---|---|---|---|---|
| Industrial production as a whole | 95.3 | 90.5 | 111.8 | 105.6 | 101.3 | 102.5 | 103.7 | 115.0 |
| Metallurgy | 92.2 | 87.3 | 114.5 | 107.6 | 98.9 | 106.5 | 101.7 | 115.2 |
| Chemical production | 97.4 | 106.8 | 103.5 | 102.4 | 105.0 | 99.9 | 109.0 | 129.4 |
| Woodworking | 96.9 | 94.3 | 106.8 | 113.9 | 104.6 | 106.4 | 103.0 | 131.5 |
| Food industry | 101.4 | 98.5 | 113.5 | 100.0 | 99.7 | 99.3 | 103.1 | 114.1 |
| Mechanical engineering | 112.0 | 68.3 | 116.7 | 104.0 | 114.3 | 86.6 | 106.9 | 87.7 |

*Source: Industrial production in the Vologda Oblast: statistics collection. Vologdastat. Vologda, 2015. 146 p.

The current situation in the industrial market and the trends of its development necessitate the formation and implementation of effective policy to strengthen interregional cooperation. For this purpose, it is important to identify the targets and main directions of its development in the long and medium term, and to develop appropriate forms and methods of their implementation.

In our opinion, the enhancement of interregional relations of the Vologda Oblast in the medium and long term pursues the following goals: improvement of inter- and intraindustry structure of interregional relations; use of sustainable flows of goods to attract financial resources from regional partners; improvement of the territorial-geographical structure of interregional relations.

The substantiation of priorities and main directions of strengthening interregional cooperation as a factor inthe development of the regional industrial complex and organization and promotion of its effective functioning involves the necessity to determine the development prospects of such cooperation. Assessing the plans for development of Russian industry helps forecast the state of domestic demand and the possibilities of increasing the supply of products by the region's enterprises to international markets.

We provide such an assessment as applied to the metallurgical industry of the Vologda Oblast. This industry is a major participant in the national market. The key enterprises of the Vologda Oblastare the following: Cherepovets Steel Mill OAO Severstal (coke, cast iron, steel, long and flat rolled sheet with polymeric coating), JSC Severstal-metiz (rolled steel, profile, wire, rope, mesh, nails), OOO Severstal TPZ-Sheksna (pipes for construction industry and engineering).

The energy strategy of Russia clearly reflected the situation concerning the demand for metallurgical products (oil and gas pipelines, ports and transportation infrastructure) on the part of several infrastructural projects of the fuel and energy complex. The machine-building complex makes the greatest contribution to the development of the industry. The automotive industry development strategy

identified long-term demand for high quality rolled metal. The target indicatorscontained in the Strategy for transport engineering development and in the Strategy for development of railway transport for production of rolling stock and transport infrastructure elements can help form a long-term forecast of the market and make substantiated investment in the development of modern production facilities.

The growth inthe amount of products manufactured at the Vologda Oblast metallurgical enterprisesand supplied on the Russian market is hampered by a lack of competitiveness of the products because they do not always meet the requirements of steel consuming industries (machine building, construction sector, oil and gas industry, railway transport). In this regard, to increase competitiveness by improving the technological status of major enterprises of the region will be a priority in the development of the metallurgical complex. The Strategy for socio-economic development of the Northwestern Federal District until 2020 contains several measures for this problem solution, such as extension of the lease of modern equipment, development of credit cooperation betweenmetallurgical enterprises and banks of the Northwestern Federal District, more efficient support of investment projects and creation of conditions for attracting investment (including tax incentives), provision of support to research and design in the metallurgical complex and to a special education system based on the expansion of cooperation with enterprises.

The Strategy for development of metallurgical industry in Russia until 2020 provides for reconstruction and modernization of production at metallurgical enterprises in order to ensure thattheir products be competitive and with a high added value.

On the whole, the Strategy for development of separate industries in the Russian Federation in the medium term stipulates thatthe capacity of the domestic market of ferrous metallurgy is to increase by 30–40% (tab. 2) and, hence, there can be a proportional rise in the supply of metal products manufactured in the Vologda Oblast.

Table 2. Forecast of metal consumption in Russia, million tons*

| Type of production | 2013 | 2020 | 2025 | 2030 | 2020 to 2013, % |
|---|---|---|---|---|---|
| Cast iron | 45.9 | 48.9 | 50.9 | 52.0 | 106.5 |
| Finished rolled iron, including: | 38.0 | 50.4 | 57.8 | 62.0 | 132.6 |
| profiled | 19.1 | 23.8 | 26.8 | 28.5 | 124.6 |
| листовой | 19.3 | 26.6 | 31.0 | 33.5 | 137.8 |
| Steel pipes, million tons | 9.0 | 13.1 | 14.7 | 16.2 | 145.6 |

Source: Strategy for development of metallurgical industry in Russia for 2014–2020 and for a long term till 2030.

The identified trends of regional economic interaction and theforecast data presented in the strategic and tactical documents on the development of the Russian Federation, its regions and economic brancheshelp determine the prospects for development of interregional links and formulate major directions and tasks for their implementation.

For metallurgy the growth in the supply offerrous metallurgy products will be caused by the enhancement of competitiveness and products quality by improving the technological level of production at leading enterprises and the expected growth of production in almost all major steel consuming sectors (primarily in engineering) of Russia's economy. The promotion of new effective types of production with high added value, and the conclusion of long-term agreements with partners are perspective areas in which the supply of metallurgical products in the domestic market can be expended.Stable demand on

the domestic market can be formed and supply on the foreign market – preserved, if the following conditions are met:

– increase inthe competitiveness of products by increasing the share of modern high-tech metallurgical products in it;

– strengthening positions in priority markets – mechanical engineering and fuel and energy.

A similar analysis was conducted for other industries in the region. Table 3 shows industrial production output in industrial sectors of the Vologda Oblast for the period up to 2020, the output is forecast on the basis of the input-output model taking into account the assessment of the prospects for development of interregional supplies. When calculating, we made a number of assumptions. Due to a lack of statistical data, the coefficient matrix of full costs for the Vologda Oblast was expert estimated on the basis of the coefficient matrix of full cost for Russia as a whole. The breakdown of value added by sectors of industry in the region was conducted on the basis of data on the country and available data on the structure of production in the Vologda Oblast.

Table 3. Forecast of industrial production in the Vologda Oblast up to 2020 (in the prices of 2013)

| Industry | Unit of measurement | 2013 | 2015 | 2017 | 2020 |
|---|---|---|---|---|---|
| Industry as a whole | Billion rubles | 429.9 | 479.9 | 542.9 | 637.4 |
| | % to 2013 | 100.0 | 111.6 | 126.3 | 148.3 |
| Ferrous metallurgy | Billion rubles | 245.4 | 257.6 | 274.8 | 294.4 |
| | % to 2013 | 100.0 | 105.0 | 112.0 | 120.0 |
| Chemical | Billion rubles | 66.2 | 82.7 | 102.5 | 125.7 |
| | % to 2013 | 100.0 | 125.0 | 155.0 | 190.0 |
| Food | Billion rubles | 30.7 | 34.1 | 39.9 | 49.1 |
| | % to 2013 | 100.0 | 111.0 | 130.0 | 160.0 |
| Woodworking | Billion rubles | 20.7 | 24.9 | 31.1 | 38.3 |
| | % to 2013 | 100.0 | 120.0 | 150.0 | 185.0 |
| Mechanical engineering | Billion rubles | 18.8 | 23.5 | 30.1 | 37.6 |
| | % to 2013 | 100.0 | 125.0 | 160.0 | 200.0 |
| Electrical power engineering | Billion rubles | 32.2 | 33.8 | 35.8 | 38.0 |
| | % to 2013 | 100.0 | 105.0 | 111.0 | 118.0 |
| Other | Billion rubles | 15.3 | 23.3 | 28.8 | 54.2 |
| | % to 2013 | 100.0 | 152.3 | 188.2 | 354.2 |

When intensifying the work on strengthening interregional cooperation, four industries, namely, ferrous metallurgy, timber industry, mechanical engineering, and chemical industry are promising “engines” of industrial production growth in the region. It is these industries that will show the largest growth in absolute production output due to its modern structure and the availability of raw materials,

facilities, and financial resources. The impact of these industries on the regional economy will be direct (increase in production output and replenishment of the budget) and multiplicative (increase in employment and wages of the population, redistribution of investment flows).

Industrial production development will be accompanied by continuous growth of labor productivity, increase in the salaries of employees, acceleration of investment processes, introduction of innovation, andrise inenterprises' profits.

When in 2020 the production output reaches the volumes stated above,the industry structure of the region will change significantly. The share of metallurgy will decrease to 46% (vs. 57% in 2013), but there will be a corresponding increase in the share of products of other industries that will significantly diversify the production structure and strengthen regional economic and budgetary security. Moreover, the data presented are considered as essential and yet as quite realistic. Excluding the essentially inertial (pessimistic) scenario, they suggest a possibility of shifting to the optimistic scenario, under which the industrial production output will grow by 1.6–1.7 times over a seven-year period.

The calculations presented above show the effectiveness of enhancement of interregional ties for the development of regional industry. The implementation of the directions highlighted in this sphere will be based on a combination of stimulating effects (by means of methods and forms of regulation), which should be chosen and implemented taking into account current socio-economic situation in the region and possibilities of government regulation of the economy. It is possible to recommend the following activities for the Vologda Oblast:

– elaboration and implementation of bilateral programs for interregional economic relations development;

– participation in the work and development of the autonomous nonprofit organization "Strategic partnership on economic and social development of the Northwestern Federal District";

– establishment of cooperative relationships between participants of the same production process;

– promotion of exhibition and fair business, involvement of enterprises in participation in Russian and international exhibitions;

– creation of an information-organizational system of interregional relations and making it available on the Internet.

The fulfillment of the above tasks and the implementation of the proposed and some other measures will boost inter-regional economic cooperation and make it an important factor in the development of regional industrial enterprises.

## Conclusion

If the above tasks and other measures are implemented, it will boost interregional economic cooperation.

The enhancement of economic cooperation between regions is an important factor in their development as they undergo economic modernization and acquire significant independence in decision-making. This cooperation helps provide the intraregional market with consumer goods and products of production-and-technological purpose, ensuring sustainable import of raw materials and components for producers; it also stimulates the domestic market and increases domestic demand, contributes to economic diversification and reduced barriers to resources transfer.

The intensification of economic cooperation between regions should be based on institutional and regulatory support of this process, the development of transport, information and other infrastructure, the use of strategic planning of socio-economic development, forecasting and modeling of domestic demand, and a number of other economic instruments. All this will helpwork out a concept for the mechanism for state regulation of interregional cooperation. Its implementation will strengthen interregional links and help overcome negative trends in their development.

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## Address and contact details of the authors

Uskova Tamara Vital’evna, Doctor of Economics, Deputy Director, Department Head.
Department of the Problems of Socio-Economic Development and Administration in Territorial Systems
Institute of Socio-Economic Development of Territories of Russian Academy of Sciences
56a, Gorky Street, Vologda, 160014, Russia.
Phone: +7 8172 59-78-06
E-mail: tvu@vscc.ac.ru

Lukin Evgenii Vladimirovich, Ph.D. in Economics, Deputy Head of the Department, Laboratory Head.
Laboratory of Modelling and Forecasting of Socio-Economic Development of Territories
Department of the Problems of Socio-Economic Development and Administration in Territorial Systems
Institute of Socio-Economic Development of Territories of Russian Academy of Sciences
56a, Gorky Street, Vologda, 160014, Russia.
Phone: +7 8172 59-78-10
E-mail: lukin_ev@list.ru

# SYSTÉM MANAŽÉRSTVA BOZP – PRÍPADOVÁ ŠTÚDIA APLIKÁCIE POŽIADAVIEK PODĽA ISO/DIS 45001:2016

*Health and Safety Management System – case study of requirements application according to ISO/DIS 45001:2016*

**Anna Nagyová, Štefan Markulik, Michaela Balážiková**

**Abstract**
Enhancing the safety and health at work has significant economic importance, as addressing issues related to safety and health to create favorable work conditions and work relations brings optimization of work process and a positive economic effect. As in other areas of business management, also in occupational health and safety, it is necessary to establish an effective management system. An example is the standard OHSAS 18001:2007, which aims to systematically limit the occupational risks that may endanger the safety and health of all persons affected by activities, products or services of the organization. The area of safety has always been perceived differently in various countries, respectively, health protection has been viewed through a socio-cultural prism.bThe initial issue period was already announced for 2016, but the International Standards Organization moved this term with the fact that it released a draft version for the public, marked as ISO/DIS 45001.The aim of this draft version is to give organizations time to become familiar with the new requirements in advance, and thus prepare them for a smooth transition from the old system to the new occupational health and safety management.

**Key Words**
risk management, system, requirements

**Abstrakt**
Zvyšovanie bezpečnosti a ochrany zdravia pri práci má dôležitý hospodársky význam, pretože riešenie otázok súvisiacich s bezpečnosťou a ochranou zdravia, s vytváraním priaznivých pracovných podmienok a pracovných vzťahov prináša optimalizáciu pracovného procesu a pozitívny ekonomický efekt. Tak ako v ostatných oblastiach riadenia podniku, aj v oblasti bezpečnosti a ochrany zdravia pri práci je potrebné zaviesť účinný systém riadenia. Organizácie pre zabezpečenie funkčného systému siahajú napr. po implementácii požiadaviek podľa normy OHSAS 18001. Cieľom tejto normy je systematicky obmedzovať pracovné riziká, ktoré môžu ohroziť bezpečnosť a zdravie všetkých osôb ovplyvňovaných činnosťami, výrobkami alebo službami organizácie. Oblasť bezpečnosti pri práci bola a stále je v rôznych krajinách sveta vnímaná inak, resp. na ochranu zdravia sa hľadí cez kultúrno-spoločenskú optiku. Aj to je dôsledok toho, že organizácia ISO sa už dlhý čas snaží vypracovať a vydať medzinárodný štandard (normu), ktorá by rozsahom a formou jednotlivých požiadaviek vyhovovala všetkých dotknutých krajín. Pôvodné vydanie tejto normy pod označením ISO 45001 bolo plánované ešte v roku 2016. Organizácia ISO vydala pracovný verziu tejto normy pod označením ISO/DIS 45001. Jej cieľom je poskytnúť časový priestor na oboznámenie sa organizácií s novými požiadavkami v predstihu, čo by malo viesť k plynulému prechod od pôvodného systému manažérstva BOZP k novému. Tento článok približuje pilotnú implementáciu SMBOZP vo výrobnej organizácii podľa požiadaviek pracovnej verzie normy ISO/DIS 450001.

**Kľúčové slová**
riadenie rizík, systém, požiadavky

**JEL Classification:** M20

## Úvod

S pribúdajúcou existenciou rôznych manažérskych systémov sa do popredia čoraz viac dostáva otázka ich úspešnej implementácie a neustále naplnenie požiadaviek. Existuje niekoľko faktorov, ktoré podporujú efektívnejšie zavádzanie systémov. Na jednej strane je to vyspelosť

organizácie, počet procesov ale taktiež ako uvádza [11], dôležitú úlohu zohráva aj zapojenie manažmentu. Za začiatok vývoja štandardizácie systému manažérstva BOZP možno považovať rok 1996, kedy bola prijatá prvá britská norma BS 8800. Potreba jednotlivých kritérií na bezpečnosť a ochranu zdravia pri práci si vynútila, že britská norma BS 8800 sa stala akýmsi medzinárodným štandardom, ktorý bol v 90-tych rokoch akceptovaný najmä v Európe. V roku 1999 bol prijatý medzinárodný dokument OHSAS 18001, doplnený o návod na implementáciu - OHSAS 18002 v roku 2000. Aj keď v tom čase nebol tento dokument oficiálnou medzinárodnou normou, dával vhodný návod na procedurálne a organizačné zásady riadenia BOZP [4].Následne v júni 2007 bol vo veľkej Británii vydaný štandard BS OHSAS 18001:2007 (*angl.* British Standard Occupation Health and Safety Assessment Series). Tento štandard nahradil špecifikáciu z roku 1999.

V roku 2012 vydala ISO organizácia dokument označený ako Annex SL (angl. Proposals for management system standards). Annex SL – Návrhy pre normy manažérskych systémov, podľa ktorej všetky medzinárodné novo prijaté alebo revidované normy musia mať jednotnú (HLS - High Level Structure) štruktúru založenú na metodológii Plan – Do – Check - .Act. Táto skutočnosť bola zohľadnená aj v prípade tvorby ISO/DIS 45001. V tomto roku (2017) sa očakáva vydanie konečnej a planej medzinárodnej normy ISO 45001.

Vychádzajúc zo štatistík organizácie ILO, každých 15 sekúnd vo svete zomrie jeden človek na následky úrazu alebo choroby z povolania a zraní sa 153 ľudí. Pracovné úrazy predstavujú obrovskú záťaž pre organizácie a spoločnosť ako celok – ide o 2,3 milióna úmrtí ročne a o viac ako 300 miliónov úrazov bez následku smrti [5].

Aj to je jeden z dôvodov prečo je pripravovaná norma ISO 45001 jednou z najočakávanejších ISO noriem pre bezpečnosť a ochranu zdravia (BOZP). S jej príchodom sa očakáva zvýšenie minimálneho štandardu bezpečnosti na pracoviskách, ako aj zníženie počtu pracovných úrazov.

## 1.Štruktúra normy ISO/DIS 45001

Dôvodom vydania Annex SL bola snaha o formálne zjednotenie všetkých štandardov manažérskych systémov zabezpečením jednotnej štruktúry. Podľa Annexu SL majú mať všetky medzinárodné normy manažérskych systémov rovnakú štruktúru v podobe desiatich kapitol, a to:

1. Predmet normy
2. Normatívne odkazy
3. Termíny a definície
4. Súvislosti organizácie
5. Vodcovstvo
6. Plánovanie
7. Podpora
8. Prevádzka
9. Meranie výkonnosti
10. Zlepšovanie

Táto zmena je dôsledkom snahy o integráciu požiadaviek všetkých manažérskych systémov, Z praktických dôvodov využije väčšina organizácií na preklopenie zmien prechodové obdobie v trvaní troch rokov, avšak každá z nich bude musieť skôr alebo neskôr pozmeniť procesy vo vzťahu k novým požiadavkám. Štruktúra Annex SL vychádza z PDCA cyklu, pričom kapitoly 4, 5, 6 a 7 spadajú do fázy Plan, kapitola 8 do fázy Do, kapitola 9 do fázy Check a kapitola 10 do fázy Act(Obr. 1) [3].

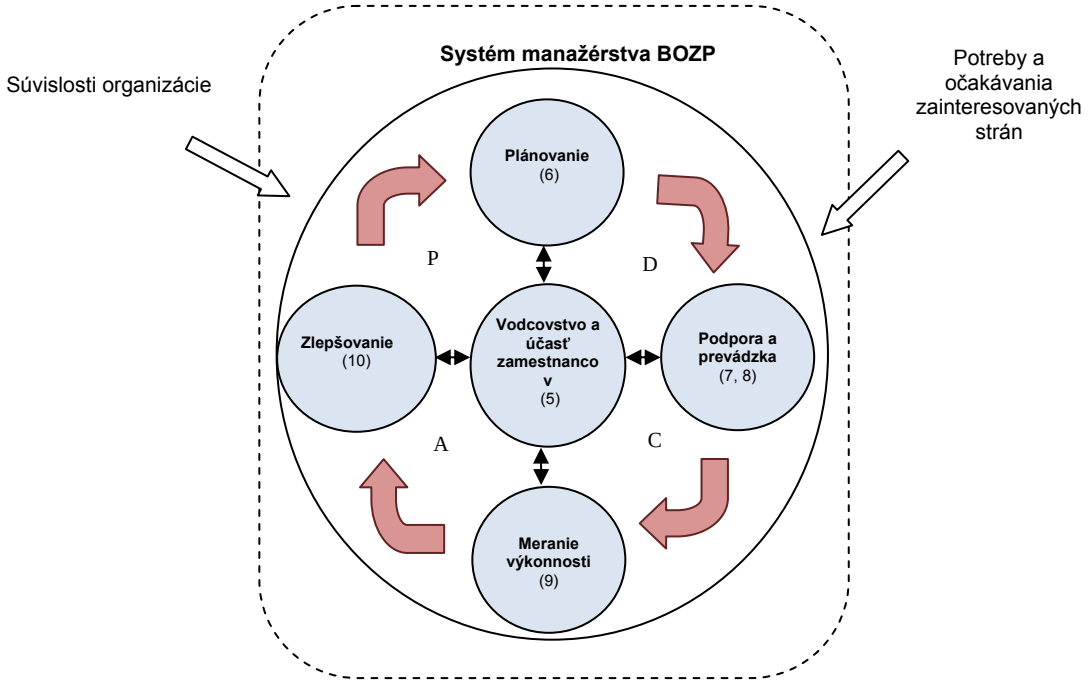
Nová štruktúra prináša so sebou aj nový prístup, a to „myslenie založené na riziku“ (*angl.* Risk Based Thinking). Predpokladá sa, že organizácie, ktoré doposiaľ nemali skúsenosti s rizikami, môžu mať isté problémy pri aplikovaní tohto prístupu.

## 2. Prípadová štúdia implementácie požiadaviek podľa ISO/DIS45001

Prípadová štúdia implementácie bola realizovaná v organizácii, ktorá má úspešne implementovaných niekoľko manažérskych systémov. Jej výrobný program je zameraný predovšetkým na výrobu špecifických materiálov používaných aj v oblasti medicíny, ktoré si vyžadujú dôkladnú analýzu procesov. Keďže v súčasnosti plynie organizácii prechodné obdobie na úpravu

certifikovaného systémumanažérstva kvality (v zmysle požiadaviek normy ISO 9001:2015), vedenie organizácie sa rozhodlo, že tento čas vhodne využijeaj na implementáciu požiadaviek normy ISO/DIS 45001. Týmto chce organizácia získať čas na implementáciu ISO/DIS 45001. V prípade, že sa budú požiadavky normy ISO 45001 v niečom líšiť od jej pracovnej verzie, bude menej náročné upraviť systém manažérstva BOZP v zmysle konečného znenia požiadaviek normy.

Obrázok 1: Model SMBOZP podľa ISO/DIS 45001:2016




Prameň: ISO 45001 Changes to OHSAS 18001 and implications for Management Systems

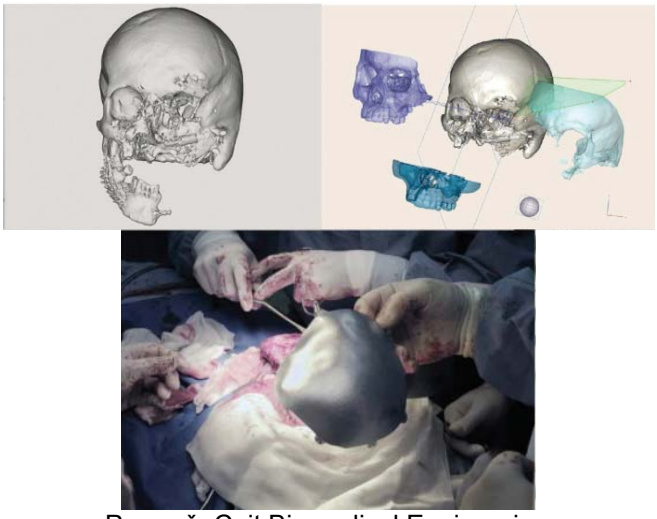
### 2.1 Popis vybranej spoločnosti

Spoločnosť Ceit Biomechanical Engineering (ďalej len CBE), s.r.o. bola založená v r.2010 ako spin-off materskej spoločnosti CEIT a.s. a Technickej univerzity v Košiciach (TUKE). Organizácia je schváleným výrobcom na mieru vyrábaných zdravotných pomôcok pomocou 3D tlače, pričom jej hlavné činnosti sú:

- výroba implantátov na mieru konkrétneho pacienta zo zliatiny titánu (Ti64) technológiou 3D tlače,
- spracovanie a úprava medicínskych dát,
- výroba dielov a prototypov z plastu a kovu technológiou 3D tlače,
- 3D skenovanie, digitalizácia, reverzné inžinierstvo, priemyselná metrológia a diagnostika.

V súčasnosti je ťažiskom podnikateľských aktivít výroba implantátov prostredníctvom aditívnej výroby. Doposiaľ bolo úspešne implementovaných približne 20 implantátov, predovšetkým kraniálneho charakteru. Organizácia úspešne navrhla a implementovala jeden faciálny implantát (Obr. 2).

Obr. 2 Návrh a aplikácia implantátu pacientovi



Prameň: Ceit Biomedical Engineering

Organizácia CBE implementované 3 manažérske systémy, a to podľa:
**ISO 9001: 2008** pre procesy produkcie aditívnou výrobou, skenovanie a reverzné inžinierstvo.
**ISO 13485: 2003**pre vývoj, výrobu a predaj zdravotníckych pomôcok.
**OHSAS 18001** na spracovanie digitalizovaných údajov a výrobu komponentov pomocou aditívnej výroby a 3D tlače. Projektové manažérstvo.

**2.2 Analýza súčasného stavu vo vzťahu k ISO/DIS 45001**

S prichádzajúcimi požiadavkami ISO/DIS 45001 sa CBE rozhodla analyzovať súčasný stav zavedeného manažérskeho systému BOZP podľa OHSAS 18001.Cieľom bolo identifikovať rozdielnosti a navrhnúť opatrenia na naplnenie požiadaviek vyplývajúcich z ISO/DIS 45001. Analýza vychádzala zo štruktúry požiadaviek ISO/DIS 45001 pričom boli identifikované nasledujúce zistenia:

**Úvod normy**
**Popis:**
V úvode normy sú okrem vysvetlenia účelu a zámeru normy vysvetlené aj faktory úspechu pre organizáciu a postup zlepšenia výkonnosti BOZP, PDCA prístup a obsah tohto vydania normy [12].

**1.Predmet normy**
**Popis:**
Táto kapitola nebola oproti norme OHSAS 18001 výraznejšie zmenená, doplnené je vysvetlenie, čo norma vyžaduje od organizácie v závislosti od určenia rozsahu jej systému manažérstva BOZP[12].

**2. Normatívne odkazy**
Žiadne normatívne odkazy nie sú v tomto návrhu uvedené [12].

**3. Termíny a definície**
Okrem základných definícií a pojmov v zmysle Prílohy SL a definícií známych z platnej normy OHSAS 18001 návrh uvádza aj definície ‘Pracovník‘ a ‚Právne požiadavky‘[12].

**4. Kontext organizácie**
Kapitola stanovuje nové požiadavky na určenie externých a interných vplyvov relevantných pre zámery a ciele organizácie, určené musia byť tiež zainteresované strany relevantné vzhľadom k systému manažérstva BOZP organizácie, ako aj potreby a očakávania týchto strán. Organizácia musí taktiež určiť hranice a rozsah svojho systému manažérstva BOZP, pričom tento rozsah musí zahŕňať všetky činnosti, produkty a služby, ktoré organizácia riadi alebo môžu ovplyvňovať výkonnosť jej systému manažérstva BOZP. V porovnaní s kap. 4.1 normy OHSAS 18001:2007 sú v kap. 4.4 návrhu zmienené procesy potrebné pre systém manažérstva BOZP (pojem proces je

používaný v návrhu normy ISO 45001 tam, kde bol v OHSAS 18001 používaný pojem postup) a je doplnená požiadavka na zlepšovanie výkonnosti BOZP [12].

**Zmena v CBE:**
CBE má identifikovaných zákazníkov a dodávateľov. Chýba identifikovanie ďalších zainteresovaných strán, vrátane ich požiadaviek a očakávaní. CBE sa orientuje na 4 hlavné procesy:

1. Návrh a vývoj produktu
2. Aditívna výroba
3. Projektová príprava výroby
4. Obchod a predaj

Súčasný SM BOZP zastrešuje všetky procesy v CBE. Pre kľúčové procesy Návrh a vývoj produktu a Aditívna výroba je nutné identifikovať všetky zainteresované strany vrátane ich (legislatívnych) požiadaviek a očakávaní. Ide predovšetkým o regulačné úrady ako napr. Úrad verejného zdravia, Inšpektorát práce a pod. Vo vzťahu k BOZP ide predovšetkým o inštitúcie a úrady dohliadajúce na dodržiavanie zásad BOZP.

**5. Vodcovstvo a účasť zamestnancov**

Návrh taktiež požaduje podstatne silnejšiu podporu vrcholového vedenia – v kap. 5.1 je vymenovaných 14 bodov, ktorými má vedenie spoločnosti preukazovať svoju angažovanosť v systéme manažérstva BOZP, napr. začlenením výkonnosti BOZP do strategického plánovania, či začlenením požiadaviek systému manažérstva BOZP do podnikateľských procesov (teda fakticky začlenením manažérstva BOZP do celkového systému manažérstva, nie vytvorenie osobitého systému manažérstva BOZP často udržiavaného a spravovaného len technikom BOZP).
Kapitola 5.2 týkajúca sa politiky nebola významnejšie zmenená, doplnené boli požiadavky na záväzok k riadeniu rizík využitím hierarchie riadenia rizík (známej už z kap. 4.3.1 OHSAS 18001) a záväzok na zvyšovanie výkonnosti BOZP. Kapitola 5.3 obsahuje časť požiadaviek prenesených z kap. 4.4.1 normy OHSAS 18001 [12].

**Zmena v CBE:**
CBE so súčasným manažérskym systémom BOZP spĺňa požiadavky vyplývajúce z ISO/DIS 45001 bez ďalších opatrení.

**6. Plánovanie**

V kapitole 6.1.1 je požadované, aby organizácia zvážila otázky vzťahujúce sa k bodom 4.1 (Kontext), 4.2 (Zainteresované strany) a 4.3 (Rozsah systému manažérstva BOZP) tak, aby systém manažérstva BOZP mohol dosahovať zamýšľané výstupy, aby bola zaistená prevencia alebo zníženie nežiaducich situácií a aby bolo dosahované trvalé zlepšovanie.
Požiadavky na identifikáciu nebezpečenstiev (6.1.2) sa príliš nezmenili, takže tie organizácie, ktoré mali identifikáciu nebezpečenstiev vypracovanú v zmysle OHSAS 18001 (rutinné a nerutinné činnosti, činnosti všetkých osôb, ktoré majú prístup na pracovisko atď.), nebudú mať s touto časťou normy problémy.
Kapitoly 6.1.3 Určenie právnych a iných požiadaviek a 6.1.4 Posudzovanie rizík BOZP neboli podstatnejšie zmenené, pribudla ale samostatná kapitola 6.1.5 Plánovanie zmien, ktorá obsahuje požiadavky na riadenie zmien (v OHSAS 18001 boli tieto požiadavky súčasťou článku 4.3.1) a kapitola 6.1.6 Plánovanie prijímania opatrení, ktorá požaduje, aby organizácia plánovala prijímanie opatrení na riešenie rizík vyplývajúcich z 6.1.2 a 6.1.4, integrovala ich do systému manažérstva BOZP a vyhodnocovala ich účinnosť.

V druhej časti kapitoly 6 sú potom uvedené požiadavky na ciele BOZP (6.2.1) a na plánovanie dosahovania týchto cieľov (6.2.2), ktoré sú dosť podobné požiadavkám z kap. 4.3.3 normy OHSAS [12].

**Zmena v CBE:**
Súčasný SMBOZP zahŕňa identifikáciu všetkých rizík súvisiacich s výrobou. Identifikované riziká sú uvedené v dokumente „Analýza rizík". Pre posúdenie rizík sa používa metóda matica rizika (typu 5x5). Na základe hodnôt posúdených rizík nebolo potrebné prijímať opatrenia na ich minimalizáciu. V súvislosti s novými požiadavkami bude ale potrebné aktualizovať identifikáciu a posúdenie rizík aj vo väzbe ku kontextu organizácie.

**7. Podpora**

Táto kapitola zahŕňa požiadavky na Zdroje (7.1), Kompetentnosť (7.2), Povedomie (7.3) a Informácie, komunikáciu, účasť a konzultácie (7.4) obdobne ako v OHSAS 18001, aj keď požiadavky na internú a externú komunikáciu (7.4.1), ako aj na účasť, konzultácie a zastupovanie (7.4.2) sú v návrhu ISO/CD 45001 detailnejšie stanovené.
Požiadavky na dokumentáciu, záznamy a ich riadenie boli v návrhu novej normy zlúčené do kapitoly 7.5 Dokumentované informácie (obdobne ako v návrhu ISO 9001 či ISO 14001) [12].

**Zmena v CBE:**
CBE ma vypracovanú, schválenú a zverejnenú politiku BOZP. Jej formulácia poskytuje rámec pre stanovenie cieľov BOZP. Ciele sú merateľné, s určeným termínom a zodpovednosťou. Politika BOZP a z nej vyplývajúce ciele sú pravidelne monitorované a aktualizované. V súvislosti s príchodom nových požiadaviek ISO/DIS 45001 bude potrebné oba dokumenty aktualizovať.

**8. Prevádzka**

Veľké zmeny nastali aj v kapitole Prevádzka, kam boli, okrem požiadaviek na plánovanie a riadenie prevádzky (8.1) obdobných ako v kap. 4.4.6 normy OHSAS, začlenené aj kapitoly 8.1.2 Hierarchia riadenia (v OHSAS 18001 v kap. 4.3.1), 8.2 Riadenie zmien, 8.3 Externé procesy, 8.4 Obstarávanie a 8.5 Dodávatelia a boli sem zaradené aj požiadavky na Havarijnú pripravenosť a reakciu (8.6) [12].

**Zmena v CBE:**
CBE musí neustále monitorovať legislatívne požiadavky regulačných úradov a prispôsobovať podmienky svojich procesov. CBE ma vypracovaný postup s názvom „Traumatologický plán". Ten svojim obsahu spĺňa požiadavky ISO/DIS45001 vzťahujúcich sa k havarijnej pripravenosti.

**9. Meranie výkonnosti**

V súlade s ostatnými návrhmi ISO noriem boli do tejto kapitoly zaradené požiadavky na monitorovanie, meranie, analýzu a vyhodnocovanie (9.1) vrátane hodnotenia súladu, interné audity (9.2) a preskúmanie manažmentom (9.3). Z významnejších zmien možno spomenúť požiadavku na stanovenie kritérií, voči ktorým organizácia bude vyhodnocovať svoju výkonnosť BOZP, ako aj požiadavky na hodnotenie výkonnosti BOZP a hodnotenie efektívnosti manažérstva BOZP. Medzi vstupmi do preskúmania manažmentom sú detailnejšie rozpísané požiadavky týkajúce sa výkonnosti BOZP a je doplnená požiadavka na posúdenie adekvátnosti zdrojov na udržiavanie efektívnosti systému manažérstva BOZP [12].

**Zmena v CBE:**
Vedenie CBE pravidelne preskúmava súčasný systém manažérstva BOZP a zabezpečuje realizáciu interných auditov. CBE bude musieť v rámci nových požiadaviek ISO/DIS 45001 upraviť obsah preskúmania manažmentom a taktiež upraviť proces auditovania a zamerať sa na nové požiadavky vyplývajúcich z kapitoly 4, 6 alebo 10.

**10. Zlepšovanie**

Táto kapitola stanovuje požiadavky pre incidenty, nezhody a nápravné opatrenia (10.1) takmer identické s požiadavkami ISO 9001:2015 a požiadavky na trvalé zlepšovanie (10.2), kde je

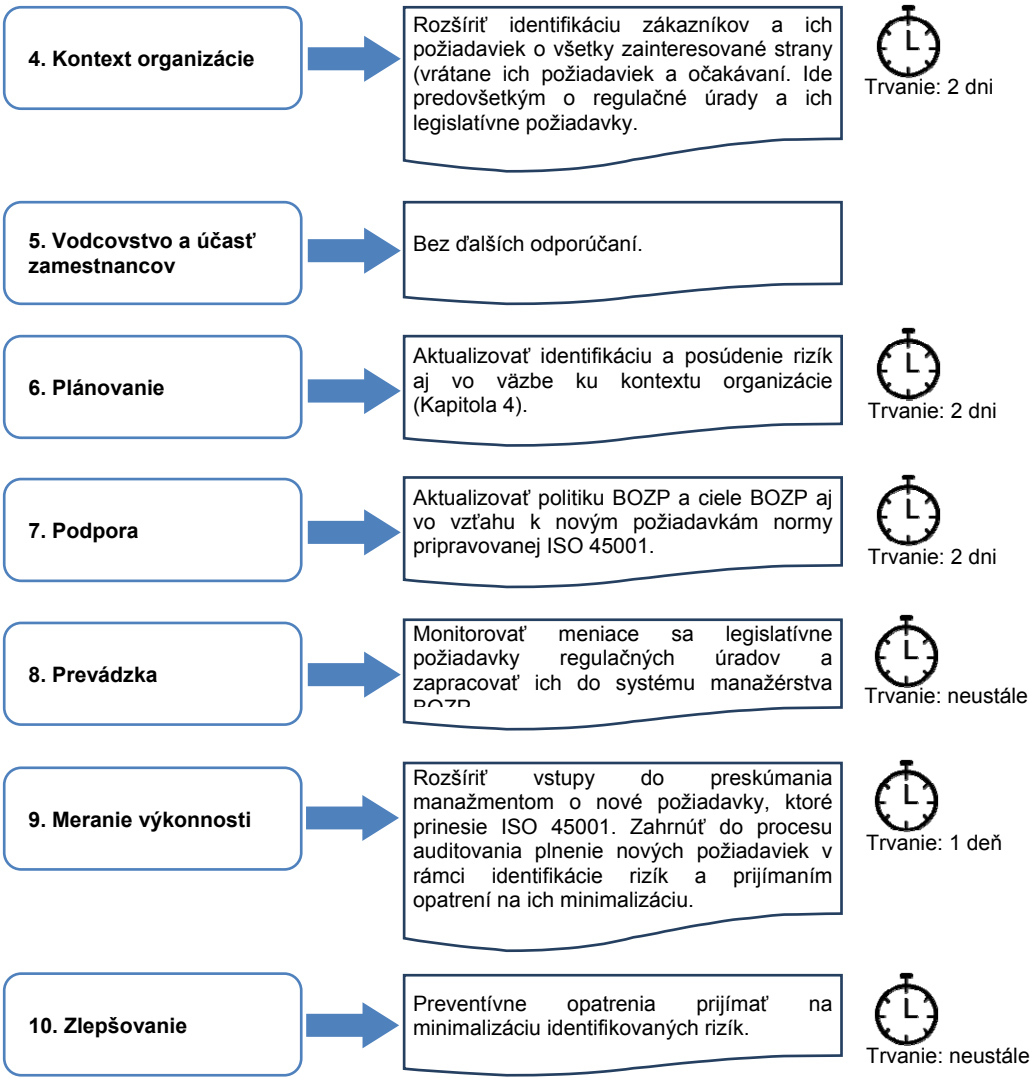
požadované, aby proces trvalého zlepšovania bral do úvahy výstupy článkov normy č. 4, 6.1, 6.2, 7.4, 9.1 a 9.3[12].

**Zmena v CBE:**
Z požiadaviek normy ISO/DIS 45001 sa vypustila preventívna činnosť (resp. preventívne opatrenie). Tie sa však stali súčasťou Risk-based thinking (požiadavky kapitoly 6). Doposiaľ zaužívané preventívne opatrenia sa v zmysle nových požiadaviek na manažérsky systém BOZP stanú súčasťou riadenia rizík. CBE na základe identifikácie rizík hodnotených ako vysoké, bude musieť prijať (preventívne) opatrenia na ich minimalizáciu. Opatrenia vyplývajúce z nápravnej činnosti sa v zmysle nových požiadaviek nemenia.

## 3 Návrh zmien v súvislosti s požiadavkami normy ISO/DIS 45001

Na základe uvedenej analýzy súčasného stavu realizovanej v CBE vychádzajúcej z požiadaviek normy ISO/DIS 45001 boli zosumarizované nasledujúce úpravy súčasného manažérskeho systému BOZP(Obr. 3).

Obrázok 3: Návrh zmien požiadaviek Systému manažérstva BOZP




Prameň: Vlastné spracovanie, 2017

## Záver

S príchodom pripravovanej normy ISO 45001 sa bude očakávať od organizácií úprava doposiaľ existujúcich manažérskych systémov BOZP. Cieľom príspevku bolo priblížiť reálne úpravy existujúceho manažérskeho systému BOZP podľa OHSAS 18001 v organizácii. Výstupom tohto článku je návrh zmien, ktoré je potrebné vykonať, aby sa naplnili požiadavky pripravovanej normy ISO 45001. Organizácia CBE pristúpila k tomuto kroku predbežne, aby tak skrátila čas transformácie svojho manažérskeho systému, keď budú požiadavky normy ISO 45001 definitívne publikované.

Tento článok bol vytvorený realizáciou projektu APVV-15-0351 " Vývoj a aplikácie modelov riadenia rizík v podmienkach technologických systémov v súlade so stratégiou Priemysel (Industrie) 4.0".

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## Adresa a kontaktné údaje autorov

Ing. Anna Nagyová, PhD. , doc. Ing. Štefan Markulik, PhD., doc. Ing. Michaela Balážiková, PhD.
Technická univerzita v Košiciach, Strojnícka fakulta, Katedra bezpečnosti a kvality produkcie
Letná 9
040 22 Košice
Tel.: +421 - 55-602 -2600
E-mail: anna.nagyova@tuke.sk, stefan.markulik@tuke.sk, hana.pacaiova@tuke.sk