Studia i Materiały. Miscellanea Oeconomicae
Rok 13, Nr 1/2009
Wydział Zarządzania i Administracji
Uniwersytetu Humanistyczno – Przyrodniczego Jana Kochanowskiego w Kielcach

**Gospodarowanie zasobami organizacji
w warunkach zagrożeń otoczenia**

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MANAGEMENT OF IMMATERIAL ASSETS IN THE CONDITIONS OF THREATS OF ENVIRONMENT

Abstract

In the article the concept of immaterial assets is described and their classification is given. Immaterial assets are examined as part of intellectual potential. Models of econometric analysis of dependence of profits from charges on immaterial assets from data of activity of commercial banks are presented.

With the increase of level of scientific and technical development of society, with development of market relations in Ukraine becomes obvious all anymore, that material assets are not the unique factor of providing of profitability of enterprises, there are other types of assets, which do not have material embodiment, but play an important role in the process of receipt of income an enterprise. Immaterial assets belong to such values[2].

An immaterial asset is a non-monetary asset, which does not have a financial form, can be identified (dissociated from an enterprise) and contained an enterprise with the purpose of the use during a period anymore one year (or one operating cycle, if he exceeds one year) for a production, trade, in administrative aims or

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[2] С.М. Климов, *Интеллектуальные ресурсы организации [Текст]*/ С.М. Климов – СПб.: ИВЭСЭП, «Знание», 2000.

grant on lease other persons.

Characteristics of immaterial assets:

- absence of material structure, that does not have a material form;
- use during great while (anymore one year);
- identified and represented in a financial statement;
- it can be own or attracted.

The features of legal defense have separate elements of immaterial assets. The right of ownership on inventions, useful models and industrial prototypes, makes sure patents.

Immaterial assets, in a that number on an enterprise intellectual property, it is possible to bring in the chartered capital in place of property, money and other financial values, for what good will of all of founders is needed only.

The use of intellectual property enables in the chartered capital:

- to form the considerable after the sizes chartered capital without the distraction of money and provide access to the bank credits and investments, using intellectual property as object of mortgage equally with other types of property;
- to amortize intellectual property in the chartered capital and substitute for it the real money, including depreciation decrees on an unit cost, that to capitalize intellectual property;
- to the authors and enterprises - to become founders (by proprietors) the proprietors of intellectual property during organization of daughter's and independent firms without the distraction of money.

The order of registration records in relation to the receipt of immaterial assets is determined coming from the source of such receipt. Enterprises can create immaterial assets own forces, to buy for a money, get for nothing, in an exchange on other objects or in quality payment to the chartered capital.

Purchased (created) immaterial assets are set off on a balance sheet on a primary cost. The primary cost of the purchased immaterial asset consists of cost (costs) of acquisition (except for the got point-of-sale discounts), duty, non-direct taxes, that indemnifications are not subject, and other expenses which are directly related to its acquisition and taking to the state of suitability for the use on purpose. Expenses in satisfaction of percents for a credit do not join in the primary cost of immaterial assets which are purchased (it is created) fully or partly due to a bank credit.

Immaterial assets are:

- rights on those or other objects of immaterial character, but not objects;
- rights which are determined as immaterial assets can arise only out of agreement (author agreement, license contract, agreement of purchase-sale, and others like that), as exactly from maintenance of agreements swims out, that an enterprise acquires those or other rights and privileges. It is very important in this case, that in an agreement there were expressly certain terms, which a person which will purchase these rights can by them use at;
- rights, which are set off on balance as circulating immaterial assets - it only

those rights which provide possibility of receipt in the future of frequent economic value.

Immaterial assets create legalistically the taken into account part of intellectual capital of enterprise and determine directions of realization of its intellectual potential[3].

Will build the model of linear regression, by which will define the degree of influence of immaterial assets on the value of profit from activity of bank, that will define efficiency of the use of immaterial assets.

$$D = \alpha NA + \varepsilon,$$

where D - total revenue from activity, NA - immaterial assets, α - unknown parameter (coefficient of linear regression), ε - a casual value (error of regression).
The objects of researches are banks with the greatest level of profits. Information is taken for period from January, 1 in 2006 for January, 1 in 2009 from the quarterly financial reporting of banks[4].

By the package of Microsoft Excel on the basis of supervisions will conduct the necessary calculations of models of linear regression $\tilde{y} = a + bx$ (where y - total profit from activity, x - immaterial assets, a - free member of equation of regression, b - a coefficient of regression) and with the purpose of verification of identity of the built model the value of statistical criteria of Fisher and Student is expected, and coefficients of correlation and determination. With the criterion of Fisher it is possible to assert about identity models to the data with probability p, if calculation values of criterion are greater from tabular values, taken with certain probability. Verification of statistical meaningfulness of coefficients of equation of regression is like conducted: if actual values of criterion of Student are greater from a tabular value, a coefficient is reliable and gives statistically the reliable estimation of dependence of effective sign from a certain factor. The value of coefficient of correlation specifies on the closeness of cross-correlation connection between the profit of bank and probed factor. The coefficient of determination shows, as far as a change or dispersion of effective sign depends on dispersion or vibrations of values of the probed factor.

As a result of econometric analysis of regression models of dependence of profit of banks from immaterial assets (tabl. 1) it is possible to draw conclusion about adequacy of the got models to empiric information with probability $p = 0{,}95$ (as calculation values are greater from the tabular value of criterion of Fisher $F_{tabl}(k_1=1;\ k_2=11;\ p=0{,}95) = 4{,}84$) for such banks, as BROKBIZNESBANK, OSHCHADBANK, PRIVATBANK, RAYFFAYZEN BANK AVAL, UKRPROMBANK, UKRSIBBANK, UKRSOCBANK and inidentity of models for banks PROMINVESTBANK, UKREKSIMBANK, FINANCES AND CREDIT.

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3 І.П. Мойсеєнко, *Управління інтелектуальним потенціалом [Текст]*/ І.П.Мойсеєнко: Монографія.—Львів, Аверс, 2007, 304 с.

4 *Структура активів банків України. Фінансові результати діяльності банків України [Електронний ресурс] / Вісник НБУ. – Режим доступу до журн.*: www.bank.gov.ua /Publication/ Of_vydan/visnik.htm

Value of coefficients of correlation from 0,3 to 0,6 shows on middle cross-correlation connection between the profit of banks and immaterial assets, that they testify to insignificant influence of this factor on a profit. Only for the banks of RAYFFAYZEN BANK AVAL, UKRSIBBANK and UKRSOCBANK of value the coefficient of correlation is greater after 0,8, that specifies on strong influence of immaterial assets on the profit of these banks. In addition, a coefficient of regression is statistically reliable for the criterion of Student, which allows with high reliable to forecast the profit of these banks, going out from the value of immaterial assets.

Table 1. Results of econometric analysis of dependence of profit of banks from immaterial assets

Bank	Equation of linear regression and values of criterion of Student for coefficients *a, b* (t_{tabl} $(p=0,95,\ k=11)$= **2,20** t_{tabl} $(p=0,99,\ k=11)$= **3,11**)	Coefficient of correlation	Coefficient of determination	Values of criterion of Fisher $F_{tabl}(k_1=1;\ k_2=11;p=0,95)$=**4,84** and $F_{tabl}(k_1=1;\ k_2=11;\ p=0,99)$= **9,86**
Brokbiznesbank	$\tilde{y} = -191974,73 + 85,51HA$ $t_a = 0,98;\ t_b = 2,33$	0,575	0,331	5,44
Nadra	$\tilde{y} = 306709,67 + 174,37HA$ $t_a = 1,08;\ t_b = 2,48$	0,599	0,359	6,16
Oshchadbank	$\tilde{y} = -923185,63 + 222,61HA$ $t_a = 1,30;\ t_b = 2,69$	0,630	0,397	7,25
Privatbank	$\tilde{y} = -3743201,79 + 1903,92HA$ $t_a = 1,42;\ t_b = 2,73$	0,636	0,405	7,47
Prominvestbank	$\tilde{y} = -1751188,56 + 209,83HA$ $t_a = 1,24;\ t_b = 2,12$	0,539	0,290	4,49
Rayffayzen Bank Aval	$\tilde{y} = 1523329,75 + 38,27HA$ $t_a = 5,74;\ t_b = 4,51$	0,806	0,649	20,33
Ukreksimbank	$\tilde{y} = -2873817,38 + 407,29HA$ $t_a = 1,04;\ t_b = 1,38$	0,385	0,148	1,91
Ukrprombank	$\tilde{y} = 35383,84 + 344,64HA$ $t_a = 0,25;\ t_b = 2,31$	0,572	0,327	5,35
Ukrsibbank	$\tilde{y} = -600056,33 + 25,26HA$ $t_a = 1,45;\ t_b = 4,72$	0,818	0,669	22,25
Ukrsocbank	$\tilde{y} = -211959,38 + 69,01HA$	0,835	0,698	25,39

	$t_a = 0{,}69;\ t_b = 5{,}04$			
Finances and credit	$\tilde{y} = 472925{,}78 - 0{,}81HA$ $t_a = 3{,}73;\ t_b = 2{,}03$	0,522	0,273	4,12

The trend analysis of the probed performance of bank indicators was also conducted, namely to the profit from activity and expenses on immaterial assets. Linear trend models $\tilde{y}_t = a + bt$ and parabolic models $\tilde{y}_t = a + bt + ct^2$ were built, where *a* is a free member of equation of trend which is not economic maintenance, *b*, *c* are coefficients of equation of trend, *y* - an economic indicator, *t* is time. The value of the got coefficient of determination R^2 specifies on a trust to equation of trend and degree of reliable of prognosis after these equalizations.

Table 2. Linear and parabolic models of trend of profit (D) and of expenses on the immaterial assets (*NA*) of banks of Ukraine

Bank	Linear trend model	Coefficient of determination	Parabolic trend model	Coefficient of determination
Brokbiznesbank	$D = 30445t + 42400$ $NA = 274{,}4t + 3310{,}2$	0,49 0,88	$D = 4051{,}9t^2 - 262813t + 184217$ $NA = 11{,}5t^2 + 113{,}7t + 3712{,}8$	0,59 0,88
Nadra	$D = 139851t - 111730$ $NA = 409{,}6t + 506{,}6$	0,60 0,48	$D = 9817{,}7t^2 + 2403{,}1t + 231889$ $NA = -29{,}3t^2 + 820{,}5t - 520{,}5$	0,64 0,51
Oshchadbank	$D = 113231t + 159621$ $NA = 228{,}4t + 6826{,}2$	0,52 0,26	$D = 15969t^2 + 110622t + 719252$ $NA = 89{,}7t^2 - 1027{,}9t + 9966{,}8$	0,64 0,71
Privatbank	$D = 429061t + 310628$ $NA = 157{,}7t + 2602{,}7$	0,46 0,56	$D = 76241t^2 - 638317t + 3000000$ $NA = -10{,}1t^2 + 300t + 2247$	0,62 0,58
Prominvestbank	$D = 102760t + 487392$ $NA = 250{,}4t + 2344$	0,28 0,26	$D = 25659t^2 + 256461t + 1000000$ $NA = 13{,}8t^2 + 56{,}4t + 12829$	0,48 0,27
Rayffayzen Bank Aval	$D = 206868t + 750792$ $NA = 4429{,}5t - 13356$	0,39 0,41	$D = 40339t^2 + 357879t + 2E + 06$ $NA = 1275t^2 - 13421t + 31271$	0,56 0,79

Ukreksimbank	$D = 126568t + 60362$ $NA = 2{,}2t + 9363{,}7$	0,51 0,01	$D = 18902t^2 - 138063t + 721939$ $NA = 14{,}4t^2 - 198{,}9t + 9866{,}6$	0,63 0,08
Ukrprombank	$D = 39378t + 68957$ $NA = 33{,}6t + 662{,}1$	0,52 0,13	$D = 5645{,}3t^2 + 39657t + 266544$ $NA = 20{,}4t^2 - 251{,}9t + 1375{,}8$	0,63 0,69
Ukrsibbank	$D = 189374t - 122693$ $NA = 7079{,}1t + 21834$	0,59 0,78	$D = 24535t^2 - 154112t + 736022$ $NA = 806{,}7t^2 - 4214{,}1t + 50067$	0,69 0,89
Ukrsocbank	$D = 166956t - 33117$ $NA = 1938{,}9t + 5955$	0,48 0,45	$D = 30825t^2 - 264590t + 1E + 06$ $NA = 482{,}9t^2 - 4821{,}2t + 22856$	0,68 0,76
Finances and credit	$D = 59171t - 155596$ $NA = -14486t + 308618$	0,55 0,05	$D = 7834{,}2t^2 - 42674t + 82042$ $NA = -7863{,}2t^2 + 95599t + 33407$	0,64 0,21

Inferences. Research of the state of immaterial assets is stipulated:

- by the use of immaterial assets directly in a production for the issue of products and transfer of technologies (licensed given);
- by forming or increase of charter fund of enterprise is due to immaterial assets without the distraction of money;
- by possibility of diminishing of base of taxation and depreciation of immaterial assets in charter fund;
- by the necessity of creation of competition product.

Researches of influence of immaterial assets on the profit of subjects of ménage specify on middle cross-correlation connection between them for part of banks and strong correlation for 3/4 probed banks. High identity of the offered linear regressive model allows to using it for research of dependence of profit of banks from immaterial assets. After the built trend models of the probed indexes of bank for the receipt of reliable prediction it is recommended to use not linear, but parabolic, trend models in connection with their higher identity.

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Streszczenie

Zarządzanie niematerialnymi aktywami w warunkach zagrożeń środowiska

W artykule przedstawione zostało pojęcie niematerialnych aktywów i ich klasyfikacja. Niematerialne aktywa przyjmuje się jako część intelektualnego potencjału. Przedstawione zostały modele ekonometrycznej analizy zależności dochodów od kosztów na niematerialne aktywa na podstawie danych z działalności banków handlowych .