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Research paper

The Strategic Framework of Cost Management for Production Competitiveness: World Experience

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Abstract

Purpose of the article is to analyze the concept of production competitiveness and develop framework of cost management. A variety of cost management techniques requires the identification of their relationship with the requirements of operations management. Identified seven key concepts of operations management, analyzed their essence, information requirements. Systematized cost management techniques accordance with modern concepts of operations management such as: standart-costing, break-even analysis, direct-costing, life-cycle costing, target costing, value analysis, functional analysis, activity-based costing, sensitivity analysis, JIT-costing, kaizen costing, activity-based cost management, value-chain analysis. The aim of the article is the establishment relevance of costing methods with the key concepts of operations management companies.

Keywords: *Competitiveness; cost management techniques; management accounting tools.*

1. Introduction

Economic term «competitiveness», which has been originally applied to:
(a) companies (group companies, departments of company);
(b) products of company;
now applies to economies of countries, states, cities, industries, and even individuals.
At the same time, there are many approaches to the interpretation of the concept of "competitiveness" and the methods of measuring it. What is competitiveness? It is advisable to follow the evolution of this concept at macro and micro levels.
At the beginning, the concept of "competition" has been introduced and thoroughly investigated in Economics (McConnell & Brue, 1990) with identification four major market models: pure competition, monopolistic competition, oligopoly, pure monopoly. For the conditions of each of these four models of the market was described the economic mechanism of price and volume production.
And accordingly, the term "competitiveness" actually characterized the company's share in the market of the sector of economy in % of the market or Sales volume (units, $).
The current implementation of this approach is the formation of annual global ratings of companies by the size of Sales ($) at the level of the global economy or it industries.
For example, the American business magazine «Fortune» for the annual global ranging of largest companies traditionally uses Revenue (**Table 1**).
According to the American business magazine "Forbes", the annual World's Largest Public Companies 2000 ranking is based on an arithmetic average of Sales, Profits, Assets, and Market Value (**Table 2**).

Table 1: The TOP 10 Largest Companies by American business magazine "Fortune Global 500" in 2017 [8]

Rank	Company	Revenue ($M)	Sector	Employees
1	Walmart	$485,873	Retailing	2,300,000
2	Berkshire Hathaway	$223,604	Financials	367,700
3	Apple	$215,639	Technology	116,000
4	Exxon Mobil	$205,004	Energy	72,700
5	McKesson	$192,487	Wholesalers	68,000
6	UnitedHealth Group	$184,840	Health Care	230,000
7	CVS Health	$117,526	Health Care	204,000
8	General Motors	$166,380	Motor Vehicles & Parts	225,000
9	AT&T	$163,786	Telecommunications	268,540
10	Ford Motor	$151,800	Motor Vehicles & Parts	201,000

Table 2: Top 10 World's Largest Public Companies by American business magazine "Forbes" in 2017 [9]

Rank	Company	Sales ($Bil)	Profits ($Bil)	Assets ($Bil)	Market Value ($Bil)	Industry
1	Citigroup	120.32	24.64	1,494.04	230.93	Banking
2	General Electric	149.70	16.35	673.30	348.45	Conglomerates
3	Bank of America	85.39	16.47	1,291.80	184.17	Banking
4	American Intl Group	106.98	11.90	843.40	172.24	Insurance
5	HSBC Group	76.38	12.36	1,274.22	193.32	Banking
6	ExxonMobil	328.21	36.13	208.34	362.53	Oil & gas
7	Royal Dutch/Shell Group	306.73	25.31	216.95	203.52	Oil & gas
8	BP	249.47	22.63	206.91	225.93	Oil & gas
9	JPMorgan Chase	79.90	8.48	1,198.94	144.13	Banking
10	UBS	78.25	10.65	1,519.40	105.69	Diversified financials

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Characteristically, that in the names of the listed business ratings, the word "competitiveness" is not used, although in fact it is implied.

However, the term "competitiveness" is used in the annual Global Competitiveness Report of the World Economic Forum. The World Economic Forum has been measuring competitiveness among countries since 1979, and defines it as:

"Competitiveness is the set of institutions, policies and factors that determine the level of productivity of a country".

Others are subtly different but all generally use the word **"**productivity" (**Table 3**). By the way, in the ranking of 137 economies for 2017-2018, Ukraine have rank 81 with score 4.11.

Table 3: The Top 10 Most Competitiveness Global Economies 2017-2018 Rankings [10]

Rank	Economy	Score	Previous
1	Switzerland	5.86	1
2	United States	5.85	3
3	Singapore	5.71	2
4	Netherlands	5.66	4
5	Germany	5.65	5
6	Hong Kong SAR	5.53	9
7	Sweden	5.52	6
8	United Kingdom	5.51	7
9	Japan	5.49	8
10	Finland	5.49	10

The Business Dictionary relates the concept of «competitiveness» with firms or nations and does not refer to products at all:

«Competitiveness – the ability of a firm or a nation to offer products that meet the quality standards of the local or world markets at prices that are the competitive and provide adequate returns on the resources employed or consumed in producing them».

This definition of competitiveness essentially more corresponds to Return on Investment – ROI than Sales (**Table 4**).

Table 4: Key Indicators Return on investment – ROI [19]

№	*Title of return on investment*	*Formula*
1	*Return on equity (ROE), or Return on net assets (RONA)*	$ROE = \frac{\text{Profit after tax}}{Equity} \cdot 100\%$ $RONA = \frac{\text{Profit after tax}}{\text{Net assets}} \cdot 100\%$
2	*Return on capital employed (ROCE), or Return on invested capital (ROIC)*	$ROCE = \frac{\text{Profit before interest and tax}}{Equity + Non-current\ liabilities} \cdot 100\%$ $ROIC = \frac{\text{Profit before interest and tax}}{Total\ Assets - Current\ liabilities} \cdot 100\%$
3	*Return on assets (ROA), or Return on total assets (ROTA)*	$ROA = \frac{\text{Profit before interest and tax}}{Assets} \cdot 100\%$ $ROTA = \frac{\text{Profit before interest and tax}}{\text{Total assets}} \cdot 100\%$

Indicator *ROE (Return on equity)* is the rate of growth of equity and affects the market rate of shares. *ROE* of leading companies of the countries is equal [28]:

USA – 19,6 %,

United Kindom – 18 %,

EU countries – 14 %,

Japan – 10 %.

However, rate *ROE* depends not only from the country but also from the industry. For example:

in USA the largest *ROE* have been food industry (25%),

in United Kingdom – engineering & design services (23 %),

EU countries – textile industry (20 %),

Japan – engineering & design services' companies (14 %).

Indicator *ROTA (Return on total assets)* is the basis for ensuring the return on equity, and characterizes the operational efficiency of the company. Average ROTA of the leading companies of the countries is:

USA and United Kingdom – 15 %,

EU countries – 9 %,

Japan – 7 %.

The highest ROTA values for industries in foreign countries belong to the same industries as ROE.

The general tendency of measurement the competitiveness of companies is, for the most part, the use of relative indicators (such as ROI) than absolute (Sales).

For example, Roth & Miller (1992) called various economic indicators for measuring Economic Performance Outcomes (**Table 5**): Annual Sales Revenue ($million), Net Protax Profits (% of Sales), Research & Development (% of Sales), Unit Growth Rate in Sales (%), Pretax Return on Assets (ROA %), Market Share of Primary Product (%).

Table 5: Economic and Other Business Outcomes by Managerial Performance Group [22]

Business Outcomes	Total sample	Laggers	Leaders
Annual Sales Revenue ($million)	$ 711,0	$ 755,9	$ 703,4
Net Protax Profits (% of Sales)	9,9 %	7,8 %	11,4 %
Research & Development (% of Sales)	4,1 %	4,3 %	3,6 %
Unit Growth Rate in Sales (%)	10,0 %	8,9 %	10,9 %
Pretax Return on Assets (ROA %)	20,2 %	12,8 %	23,6 %
Market Share of Primary Product (%)	37,4 %	39,4 %	35,1 %

In strategic management Fathutdinov (1999) formulated a general definition of competitiveness as:

«the ability of an object, which characterizes the degree of satisfaction of specific needs in comparison with similar objects presented on the market»,

and noted that in order to measure the competitiveness of the object, the necessary information is about the useful effect of the object and objects of competitors for the normative useful life and the total costs for the life cycle of the objects [7].

For quantitative valuation of competitiveness, Fatkhutdinov suggested to use the formula:

$$Competitiveness_{object} = \frac{Effeciency_{object}}{Effeciency_{best}} \cdot K_1 \cdot K_2 \cdot K_n \quad (1)$$

$Effeciency_{object}$ – *efficiency of the object in this market;*

$Effeciency_{best}$ – *efficiency of the best object in this market;*

$K_1 ... K_n$ – *coefficients that characterize competitive advantages*

with the preliminary estimation the indicator "Efficiency of object" by the formula Glychev (1988):

$$Efficiency_{object} = \frac{Useful\ effect}{Total\ costs} \quad (2)$$

Useful effect – *useful effect of object for normative life in a specific market;*

Total costs – total costs for normative life of object in specific market.

In this case for estimation, for example, the useful effect of one-parameter machines, Glychev recommended the formula:

$$Useful\ effect = \sum_{t=1}^{T} Productivity_{hour} \cdot Hours_{year} \cdot K_1 \cdot K_2 \cdot K_n \quad (3)$$

T – *normative life of machine, years;*

$Productivity_{hour}$ – *machine productivity for one hour;*

$Hours_{years}$ – *annual machine plan of hours;*

$K_1 ... K_n$ – *coefficients that characterize the inconsistency of the machine's quality indicators with the requirements of the consumer*

The focus on the competitiveness of the company is based on operations management:

"The development of any firm and the level of its competitiveness to a large extent depends on how well organized its management of production resources. This is the main task of operational management. Operations management is engaged in the development of organizational systems that ensure the most efficient use of materials, human resources, equipment and facilities in the process of manufacturing products or services and management of them" [3].

In operations management achievement of competitiveness is related to the corporate (operations) strategy of the company and the election of competitive priorities.
In the last 20 years (1996-2016), there are different points of view regarding competition priorities (capabilities) in operational strategy:
cost,
competitor orientation, customer orientation,
delivery (delivery dependability, delivery speed, fast delivery, dependability, speed),
efficiency,
environmental and social sustainability (environmental protection),
flexibility (product flexibility, size flexibility, volume flexibility),
innovation (innovation orientation, frequent innovation),
operation,
price (low price),
product (innovative products, new product frequency, product line, product range),
quality (conformance quality, conformance product, design quality, design and quality, product quality),
reliability,
service (after-sales service, customer service),
versatility.
However, the traditional production of competitive capabilities, such as quality, delivery, flexibility and price, which Skinner proposed (1978), remains basic.
However, considering the problem of competitive struggle against the position of any company that sells any products in the market where its competitors operate, a company with lower costs will be more competitive.
As Ward K. (1992) pointed out in his "Strategic Management Accounting", many US and European industrial companies have long been aware of the fact that their Japanese competitors have a steady competitive advantage in costs, which allows them to sell by very low prices. First, the US and European companies mistakenly believed that Japanese exporters only temporarily set low prices to squeeze out their local competitors, and then raise prices for returning to profitability. Only after receiving information about the low levels of expenses in Japanese companies, western companies have adopted similar hard-term programs to reduce costs on a long-term basis.
Therefore, in our opinion, the level of competitiveness of the company in the short term is appropriate to determine the rate of profitability of sales:

$$Competitiveness_{Production} = Profit\ margin = \frac{Profit\ before\ Interest\ and\ Tax}{Sales} \quad (4)$$

So, the Walmart with the maximum annual Revenue at 2017 year has Profit margin at the level only 2.8 %.
By the way, it's difficult to get accurate information about competitor's levels of costs, especially when competitors are part of large diversification groups, which publish only consolidated financial results and therefore do not provide information about the results of specific operating departments.
As for the position of the consumer who chooses any product (whether a steamer, mobile phone, accounting program, apartment, land or car) in the modern market of overproduction, it is expedient for him to calculate the efficiency of the purchase of goods as the ratio of "Price" and "Useful effect (productivity, value, quality)":

$$Efficiency_{Purchase\ of\ good} = \frac{Price}{Useful\ effect} \rightarrow min \quad (5)$$

Thus, for a consumer to make a rational decision when choosing a good, it may be useful to calculate the formula (2), but this is not an indicator of competitiveness.

2. Main Body

The lack of the generalized principles and practices of management accounting at the international level always acts like an objective obstacle to its further development.
In 2014 the two most authoritative world organizations American Institute of Certified Public Accountants and Chartered Institute of Management Accountants (AICPA and CIMA), that combine more than 600 thousand professionals from 177 countries, according to the research of accounting practices of 20 countries from 5 continents have developed a consulting project Global Management Accounting Principles.
This document became the first international guidance in the field of management accounting, its framework.

Table 6: Definitions of Management Accounting by The Global Management Accounting Principles [11-12]

Source	Contents
GMAP 2014, p. 5	Management accounting creates value and ensures sustainable success by contributing to sound decision making through the comprehensive analysis and provision of information that enables and supports organizations to plan, implement and control the execution of their strategy
GMAP 2015, p. 50	Management accounting – the sourcing, analysis, communication and use of decision-relevant financial and non-financial information to generate and preserve value for organizations

An important result of public discussion Global Management Accounting Principles (2015), involving more than 400 representatives of organizations of different industries was to determine four universal principles of management accounting (influence, relevance, analysis, trust) and their practical application in fourteen areas of management:
1) cost transformation and management,
2) external reporting,
3) financial strategy,
4) internal control,
5) investment appraisal,
6) management and budgetary control,
7) price, discount and product decisions,
8) project management,
9) regulatory adherence and compliance,
10) resource management,
11) risk management,
12) strategic tax management,
13) treasury and cash management,
14) internal audit.
However, specific Management Accounting Tools and Techniques in this document were not considered with indicating that organizations should choose and regularly review the methods and tools of Management Accounting, which are the most suitable for their needs:
Strategic Scorecard,
The Balanced Scorecard,
Activity Based Budgeting & Costing,
Value Chain Analysis,
Enterprise Risk Management (ERM).
From the position of IFAC (1998), management accounting has undergone four stages of evolution (**Table 7**):
Stage 1: Cost Determination and Financial Control.
Stage 2: Provision of Information for Management Planning and Control.
Stage 3: Reduction of Waste in Business Resources.
Stage 4: Creation of Value through Effective Resources Use.

Table 7: Characteristics of Management Accounting Practices in Four Stages of Evolution [1]

	Stage 1: Cost Determination and Financial Control	Stage 2: Provision of Information for Management Planning and Control	Stage 3: Reduction of Waste in Business Resources	Stage 4: Creation of Value through Effective Resources Use
Representative period	Prior to 1950	1950–1964	1965–1984	1985 to date
Where positioned in organization	Similar to company secretarial	A 'staff' management activity	Management accounting an integral part of management. 'Owned' by all managers as the distinction between 'staff' and 'line' management becomes blurred	
Role	A necessary technical activity in 'running' an organization	Providing information to support 'line' management's operations	Managing resources (including information) to 'directly' enhance profits by bearing down on inputs	Directly enhance outputs and add value through strategy of 'leveraging' resources (especially information)
Main focus	Cost determination and controlling expenditure	Information for management planning, control and decisionmaking. Including basic model building	Reduction of waste/loss in business resources through process analysis and cost management technologies	Creation of value through using resources effectively to drive customer value, shareholder value and innovation

The organization of management accounting in modern companies is related with the election of methods and techniques of accounting and cost analysis as: job-order costing, process-costing, operation costing, cost-volume-profit analysis, standard costing and variance analysis.

But recently has been developed a number of new approaches to the accumulation of costs including: direct-costing, activity-based costing, JIT-costing, life-cycle costing, target costing, value analysis, functional analysis, kaizen costing, quality costing, activity-based management, performance based costing more.

The essence of these methods are highlighted in the works of internationally renowned authors as C. Drury (2005), Charles T. Horngren, Sricant M. Datar, Madhav V. Rajan (2012), John K. Shank, Vijay Govindarajan (2008), Jae K. Shim, Joel G. Siegel (2009), A. Upchurch (1998), Larry M. Walther, Christopher J. Skousen (2009).

At the same time the providing of high results requires the substantiation of criteria for selecting of the most appropriate methods of Management Accounting from the standpoint of practical needs of companies.

So, still it is not developed universal (global) recommendations that would disclose the relationship between costing methods and concept of operations management, based on the information needs of managers (Dubovaia, 2008).

According to the results of study of accumulated ideas and methods of operations management in areas of production and services, was allocated seven key concepts of operations management, according to which was defined Costing & Analyses Techniques (**Figure 1**).

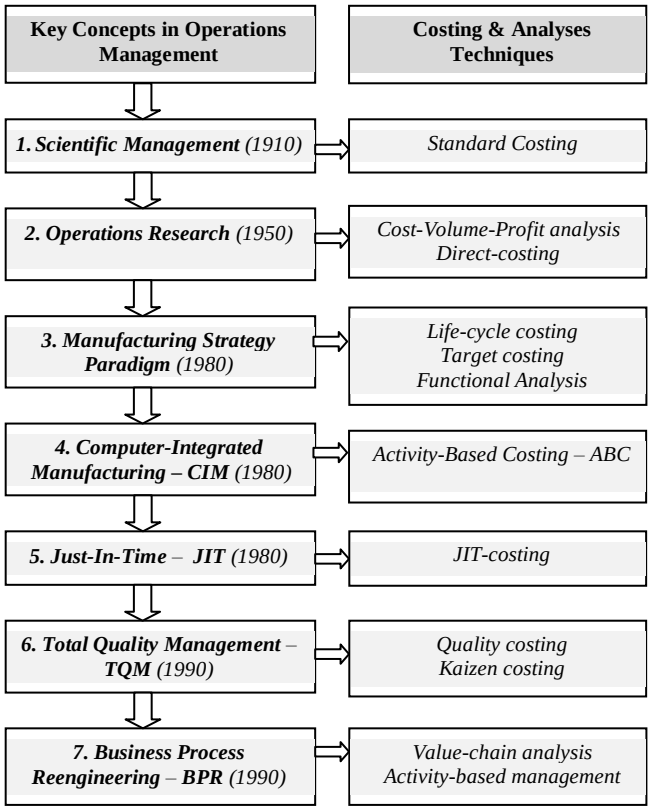


Fig. 1: Influence of Key Management Concepts on Cost Management Techniques/

Each of these concepts puts the certain tasks before cost management, for solution of which in management accounting were developed specific methods and techniques.

Thus there is an evolutionary development as technologies of management, and as instrumental base of cost management. The main task of operations management is an effective and rational conduct of productive production activity of companies.

1.***Scientific Management***

As a basic concept of production management (which especially has become widespread in metallurgical and engineering plant) is *Scientific Management*, which became the impetus for the appearance and development of methods ***Standard Costing*** (in USSR – the normative method of cost accounting [32]).

2. ***Operations Research***

Within the theory *Operations Research* (the application of advanced analytical methods to help make better decisions) for the election of the most economically expedient technological processes and the equipment are using ***Break-even Analysis*** and ***Sensitivity Analysis***. This is facilitated by the use of ***Direct-costing*** (or ***Variable-costing***).

3.***Manufacturing Strategy Paradigm***

Within the concept of *Manufacturing Strategy Paradigm*, the basic idea of which is based on concentration of production in one of the alternative strategies, because the company is unable to achieve the highest possible performance indicators simultaneously in all directions. Within this concept was developed ***Life-cycle Costing***. This makes it possible to estimate the costs of producing the product during its life cycle and future income on all design stages (pre-production, production and post production).

In modern management should take into account the changes in the approach to pricing of products: at first form a price and then determine the economically justified costs of production. This is the main idea of ***Target Costing***, according to which even at the level of designing of a new product set a target level of costs for its production. It gives an opportunity to bring in line the technical requirements of the product and the cost of its production. In this case the cost of the product at a given level of functionality is less than the target level of the cost of its production.

To determine what characteristics should be in the production of a certain quality and how to achieve them at the lowest cost, in all countries around the world in Operating Management use ***Value Analysis*** (or its second denotation ***Value Engineering***), which is used as at the product design stage and as at the production stage. The application of this method is to achieve equivalent or even higher indicators of product's perfection with less costs.

In foreign practice value analysis needs in conduction of ***Functional Analysis***, the main idea of which is the comparison of the prime price and the cost of each function of the product. This allows to reduce the prime price of a product in whole or increase the cost of the functions of the product, by which the prime price exceeds the cost.

4.***Computer-Integrated Manufacturing – CIM***

The fourth concept operating management should be recognized *Computer-Integrated Manufacturing – CIM* or *Factory of the Future – FOF*. Full automation of production processes is achieved by creating Flexible Manufacturing Systems – FMS, which consist from machining centers with automatic giving and disembarkation of details, systems of the automatically guided transport vehicles and other elements of computer-aided manufacturing, in which a person almost does not take part.

The increases of assortment of products and part of indirect charges led to use in the companies of the USA and Europe of the method ***Activity-Based Costing – ABC*** *(or* ***Transaktions Costing****)*, feature of which is an alternative approach of accounting and distribution of indirect costs by types of activity (functional centers), but not by subdivisions.

5.***"Just-In-Time – JIT"***

The fifth concept of opera ting management is a concept which was formed in 1980 in Japan by the term *"Just-In-Time – JIT"*, (or as it is called by Toyota Motor Company, – *Toyota Production System – TPS*). Its essence consists in the production of necessary amount of products of high quality in minimum possible terms. According to this approach is achieved not only traditional saving of production resources in the sphere of production, but also saving in the sphere of its provision and realization. Introduction of TPS caused the development of ***JIT-costing***.

By the methodology Standard Costing opposite has been recognized unsuitable in conditions the use of the concept of Just-In-Time, because in its conditions the criteria estimation of activity, instead implementation of planned volumes of production or purchase of materials for the planned prices, use criteria of the timely expenditure of firm resources and quality assurance.

6. ***Total Quality Management – TQM***

The sixth concept of production management, which since 1990 years actively implemented in enterprises, is the concept of *Total Quality Management – TQM*. Implementing TQM approach led to ***Quality Costing***, which is determined by four groups of costs that are classified into:

(a) costs of quality conformance,

(b) costs of non-conformance.

The objective of cost management on product quality is their minimization. In Japanese organizations is widely used ***Kaizen Costing***, which envisages the planned reduction costs of production due to the continuous improvement of the quality of production processes.

7. ***Business Process Reengineering – BPR***

In the further development of accounting and cost management influenced the conception *Business Process Reengineering – BPR*. Business process includes a number of activities that are coordinated connected with each other, which allows to achieve a specific desired goal.

Updating of business processes means *"fundamental revision and radical redesign of business processes to achieve significant improvement of the main indicators of their efficiency, such as cost, quality, service and speed" (Chase, Aquilano, Jacobs, (1998), Komelina, O.V. (2017)*. This conception applies not only to production processes, but also to all other processes of enterprise.

Within the conception of BPR a special importance gets ***Activity-based Cost Management – ABCM***, namely the calculation of the three types of work: value-adding work, non-value-adding work, waste.

Herewith is recommended to carry out ***Value-chain Analysis***, scilicet to study not only processes in the enterprise, but also to detect the full *Value-chain* (the sequence of kinds of economic activity that create the value of products) in the field of the enterprise in order to increase the overall efficiency of creating the value.

The practical application of a specific Cost Management Techniques is also associated with an appropriate cost grouping, and therefore requires the development of practical recommendations (**Table 8**).

Table 8: Key Management Concepts, Cost Management Techniques and Types of Costs

Key Management Concepts	Cost Management Techniques	Types of Costs
Scientific Management	Standard Costing	standard costs actual costs
Operations Research	Cost-Volume-Profit analysis	variable costs fixed costs
	Direct-costing	direct materials costs direct labor costs manufacturing overheard
Manufacturing Strategy Paradigm	Life-cycle costing	costs of design costs of manufacture & operation costs of end of life
	Target costing	target costs actual costs
	Functional Analysis	costs of functions
Computer-Integrated Manufacturing	Activity-Based Costing	costs of resources supplied costs of resources used costs of resources unused
Just-In-Time – JIT	JIT-costing	waste from over-production, waste from waiting time, transportation waste, inventory waste, processing waste, waste of motion, waste from product defects
Total Quality Management	Quality costing Kaizen costing	costs of quality conformance costs of non-conformance
Business Process Reengineering	Value-chain analysis	costs of Value-Adding Work costs of Non-Value-Adding Work waste

3. Conclusions

1. The presented systematization of Cost Management Techniques according to Key Management Concepts shows their constant improvement and evolution. It is theoretically important from the standpoint of study of evolution cost management techniques, their adequate application in practice and the educational sphere on training specialists in management accounting and management.

2. In a practical aspect was conducted systematization and generalization Cost Management Techniques according to Key Management Concepts creates new opportunities for improving the tools of realization the strategy of development of the companies and firms in any field of activity.

The concretization of cost management techniques provides appropriate management approaches in the organization of production activity, because the criterion for their selection should be the key concept of management.

3. The actual direction of future research from Management Accounting remains the development of effective management accounting techniques for providing other areas of management, including management and budgetary control, price, discount and

product decisions, project management, regulatory adherence and compliance, resource management etc.

References

[1] Abdel-Kader M. & Luther R., (2006), IFAC'S Conception of the Evolution of Management Accounting: a Research Note. *Advances in management accounting, ELSEVIER*, Vol.5, 229-248.

[2] Business Dictionary, (2018), available online: http://www.businessdictionary.com/definition/competitiveness.html

[3] Chase R.B., Aquilano N.J. & Jacobs F.R., *Production and operations management: manufacturing and services*, (1998), NY, McGraw-Hill, 889 p.

[4] Drury Colin, *Cost and Management Accounting: an introduction*, (2006), 6th edition, London: Thomson Learning, 596 pages.

[5] Drury Colin, *Management Accounting for Business Decisions*, (2005), 3rd edition, London: Thomson Learning, 549 pages.

[6] Dubovaia V.V., *Accounting and control of costs of the main production at machine-building enterprise*, Manuscript, (2008), SHEE "Vadym Hetman Kyiv National Economic University", *Kyiv*, 195 p

[7] Fathutdinov Rais A, *Strategic Management*, (1999), Moscow, 120-124.

[8] Global 500 List 2017, *Fortune*, available online: http://fortune.com/fortune500/

[9] Global 2000: The World's Largest Public Companies, *Forbes* (2017), available online: https://www.forbes.com/global2000/#59c83007335d

[10] Global Competitiveness Report, *World Economic Forum* (2017-2018), available online: https://www.weforum.org/reports/the-global-competitiveness-report-2017-2018

[11] Global Management Accounting Principles (2014): Consultation Draft powered by AICPA and CIMA, *CIMA*, 50 p.

[12] Global Management Accounting Principles (2015): powered by AICPA and CIMA, *CIMA*, 54 p.

[13] Glychev A.V., *Basics of product quality management*, (1988), Moscow.

[14] Horngren Ch.T., Datar, S.M. & Rajan, M.V. *Cost Accounting: A Managerial Emphasis*, (2012), 14th edition, Prentice-Hall, 869 pages.

[15] Jacobs F. Robert & Chase Richard B., *Operations and Supply Management: The Core*, (2010), NY, McGraw-Hill, 544 p.

[16] Komelina O.V. (2017) *Re-Engineering for innovative potential development: Innovative potential of the national economy: the implementation of priority*: [monograph] / under the general editorship of Raimbekov Zh.S., Rakhmetulina Zh.B. - Astana: L.N. Gumilyov eurasian national university. 95 – 107.

[17] Komelina O.V. & Dubovaia V.V. (2017), Relevance of cost management techniques and key management concepts to innovative development of the enterprise, *Детермінанти інноваційного розвитку соціально-економічних систем,* 240-249.

[18] McConnell Campbell R. & Brue Stanley L., *Economics: Principles, Problems, and Policies*, 11th edition, McGraw-Hill Publishing Company, Vol. 2, (1990), 65-66.

[19] Onyshchenko V.O., Bondar, M.I. & Dubovaia V.V., *Accounting in Foreign Countries*, Kiev Center of educational literature, (2015), 186-188.

[20] Pakhomova L., (2016), Competitive Priorities in Operations and Technology Management: Literature Review. *Graduate School of Management, St. Petersburg State University*, available online: https://dspace.spbu.ru/bitstream/11701/6448/1/14_WP% 20 2016%20Pakhomova.pdf

[21] Rosenzweig Eve D. & Roth Aleda V., (2004), Towards a Theory of Competitive Progression: Evidence from High-Tech Manufacturing. Evidence from High-Tech Manufacturing. Production and Operations Management 13(4), 354–368, *Production and Operations Management Society // https://pdfs.semanticscholar.org/6909/3bbc904ce9652d2410338e2c2b94f63b6aeb.pdf*

[22] Roth A.V. & Miller J.G., (1992), Success Factors in Manufacturing, *Business Horizons*, 73-81.

[23] Shank John K. & Govindarajan Vijay, *Strategic Cost Management: The New Tool for Competitive Advantage*, (2008), Free Press, 272

[24] Shim Jae K. & Siegel Joel G., *Modern Cost Management & Analysis*, (2009), 3rd edition, Barron's Educational Series, Inc., 384 p

[25] Skinner W, (1978), Manufacturing in the Corporate Strategy, *New York: John Wiley*

[26] Upchurch Alan, *Management Accounting: Principles & Practice*. (1998), Financial Times Professional Limited, 720 pages

[27] Walker J, (2009), Fundamentals of Management Accounting. *CIMA, ELSEVIER Ltd*, 505 p

[28] Walsh Ciaran, *Key Management Ratios: the 100+ ratios every manager needs to know*, (2008), 4th edition, Prentice-Hall, 61-92

[29] Walther Larry M. & Skousen Christopher J., *Managerial and Cost Accounting*, (2009), Download free ebooks at bookboon, / http://library.ku.ac.ke/wpcontent/downloads/2011/08/Bookboon/Accounting/managerial-and-cost-accounting.pdf

[30] Ward K., *Strategic Management Accounting*, (1992), Reed Educational & Professional Publishing Ltd, 119-162.

[31] Dubovaya V.V. (2016), Konceptual`na osnova metodiv obliku vy`trat u promy`slovosti, *Black Sea Economic Studies*, Vol. 12(2), 154-158.

[32] Dubovaya V.V. (2016), Udoskonalennya nacional`ny`x zasad normaty`vnogo me-todu obliku vy`trat u promy`slovosti, *Business Inform*, Vol. 12, 229-237

[33] *Upravlinnya ta administruvannya v nacional`nij ekonomici: informacijno-anality`chny`j aspekt: [kolekty`vna monogra-fiya] / Za red. d.e.n., prof. Komelinoyi O.V. – Poltava, A. F. Pusan*, 2016. – 228 p.