

# Budgeting Integration with a Business Strategy and Accounting System in Business Process Management - Case Study of Ukrainian Company

Viktoria Yatsenko<sup>1</sup>, Yevhen Kudriavets<sup>2</sup>

<sup>1</sup>Kherson National Technical University, 24, Beruslavske st., Kherson, 73008 Ukraine  
viktorijajacenko@gmail.com

<sup>2</sup>Taras Shevchenko National University of Kyiv, 90-A, Vasulkivska st., Kiev, 03022  
Ukraine  
ykudriavets@gmail.com

**Abstract.** A client, quality and time should become the priority targets of the company's budget process in the post-industrial era. Therefore, sales of products should be priority process rather than production process. Moreover, budgeting is no longer a function of a separate department, but transforms into a cross-functional process. In order to model the business process «Implementation» based on the previous description we used the concept of BPM and the tools of the Workflow class. Budgeting becomes more integrated into the company's general information system rather than ever before, since budgets for the next calendar year include target indicators which are oriented to implementation of the business strategy, also they establish direct link and feedback with accounting system data, analysis and controlling. This approach presupposes the responsibility of specific executors and timing of implementation, it can be promptly managed and evaluated as a business process. The value of the BP “Budgeting” is to provide concrete recommendations to practitioners and identify open research areas for academics, thereby expanding and enriching traditional frameworks of BPM. Nowadays, budgeting is not one-time and coordinated set of actions but rather a transparent, easy-to-transform, integrated business process that contributes to the company's strategic growth.

**Keywords.** budgeting, business process, budget sales, accounting system, business strategy, workflow.

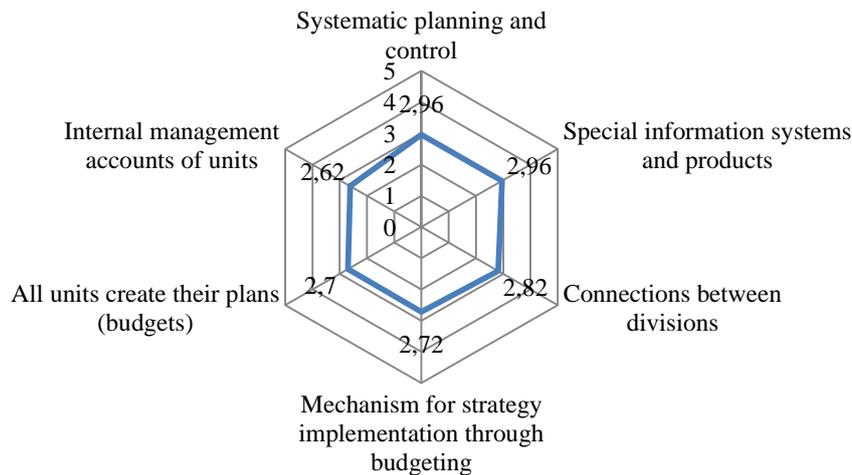
## 1 Introduction

To scope out the state and development of budgeting as an element of the management system in Ukrainian enterprises, we have used some results of the analytical report [1].

The results confirm that budgeting and strategic planning are the most widespread management technologies among Ukrainian companies. We have noted the growth of interest in budgeting compare to the previous period by 42%. However, at a time of significant increase in the use of process management to 43%, compared with the

previous 15%, business process reengineering has dropped almost twice from 48% to 27%.

Averagely, the degree of acceding to submission that a company has both systematic planning and control (annual or quarterly) is 2.96 (Fig. 1).



**Fig. 1.** Average rating of acceding to following submissions (5-grade scale) [1]

A low score of 2.7 points reflects that in companies about half of all units form their plans (budgets), which are supervised by management. Also, not all divisions record internal management reporting (2.62 points). The existence and implementation of the relationship (information flows, responsibility, authority) between the divisions were assessed only in 2.82 points. A mechanism for a company strategy implementation through the tasks for subdivisions and the development of budgets were estimated at 2.72 points. Special information systems and products are widely used by companies for information processing (2.96 points).

Furthermore, according to a recent research with some large Fortune companies by Wixom and Beath (2014), obstacles for firms to realize expected value from their data initiatives include: lack of common data platform and missing or broken business processes to support the common data platform, lack of user engagement, and lack of leadership or commitment for required change; and their suggestions for addressing these identified barriers are: having user-centric development (i.e., actively engaging users to develop tools and services), developing hybrids on staff (i.e., proactively nurturing business-savvy IT people and IT-savvy business people), and marketing internally (i.e., aggressively marketing and selling the value of data) [2, p. 37].

Therefore, despite the leadership of strategic planning in the rating of managerial technologies over a long period of time, solution of short-term tasks through annual budgets development and analysis of their implementation is still priority of management. Due to the high turbulence of the external environment, strategic

management is losing its value in the management and owners of the company. Even in case of a strategy, mechanisms for controlling its implementation through the development of annual budgets and recording are not always applicable or ineffective.

Process management displaces the traditional (functional) one. At the same time, harmonisation and business processes reengineering disappear from the list of popular management technologies, which is risky, taking into account active implementation of information systems, since customer company of software usually has responsibility for business process architecture. There is a popular misprediction that if information system exists it can solve all major problems. It is one of the main reasons why company's automation projects are ploughed.

The purpose of the article is to present budgeting as an element of a business process management system integrated with a business strategy and accounting system, incorporated into a workflow. The paper will help to understand better the business objectives of a company for further business processes modelling.

This stems from the need to address the following tasks:

- 1) to build a budgeting model as a business process using tools of the Workflow class;
- 2) to minimize incoming information flows based on mobile and flexible modelling;
- 3) to consolidate and detail the outcomes of the business process.

## **2. Related Works**

The change of the priority direction in management from the production sphere to the sale of products is the main characteristic of the post-industrial stage of society's development. For instance, prof. El-Kelety (2006) says that focus on customer (a Greater Focus on the Customer) is one of the important trends in the development of modern business. He highlights three strategic criteria, which are in the limelight of modern companies: customer, quality, and time [3 p. 12].

Traditional concepts and management theories of the industrial age were based on a functional approach, but it became ineffective in a dynamic and changing world, which requires calculating of every step in achieving the goals. Gradually academic community and practices have moved to more rational and expedient approach – process approach. In these conditions, methods of cost accounting ABC, ABB method of budgeting, as well as the concept of ABM in management emerged and developed. The process approach was known at Taylor's time (1998) [4], but the most popular it became within the framework of TQM philosophy (Total Quality Management).

The BPR concept (Business Process Reengineering) developed by M. Hammer and D. Champi (1993), was based on the process approach [5], which later became a basic concept for Business Process Management (BPM).

Author believes that the most comprehensive work about BPM is popular book written by Jeston J. & Nelis J. (2014) [6], which saw three editions. Paim, Caulliraux, & Cardoso (2008) say that BPM includes components of total quality management (TQM), the value chain, Six Sigma, Lean, and enterprise resource planning (ERP) [7]. Jan vom Brocke, Theresa Schmiedel, Jan Recker, Peter Trkman, Willem Mertens, Stijn Viaene, (2014) characterize BPM as a research domain and guide its successful

use in organizational practice [8, p. 530].

There are three main directions of BPM:

- Efficiency of major companies' business processes, such as supply, production, sales and marketing [8-11];
- corporate philosophy (culture) of BPM [12-13];
- the use of information technologies for BPM implementation [14-15].

Serving business processes are out of eyeshot of many researchers, in particular budgeting, and their connection with the strategic goals of a company. The purpose of this study is to address this research gap.

Investigation of BPM done by Ukrainian scientists and its practical application by enterprises is at an early stage.

It should be noted, that the orientation to the production process was in evidence for all national economies of the industrial area. The revival of Ukrainian industrialization concurred with the Soviet regime that is why state multilevel centralized planning dominated so many decades which was based on rigid resource standardization, while consumer demand and inquiries were ignored. Now we can assess how difficult the situation was for Ukrainian enterprises at the end of the twentieth century because they had to work in conditions of completely destroyed political system and transitional period not only to the market economy, but also to the post-industrial era. New conditions dictated alternative measures for survival of enterprises in the market competition.

One of the tools of a market economy that enterprises have had to master is budgeting, which is being analysed through the studying, adapting and implementing foreign experience. Therefore, the most common areas of budgeting research among Ukrainian scientists are:

- theoretical aspects [17-21];
- introduction of budgeting in Ukrainian companies [22-26].

S. Y. Bersutskaya and O. O. Kamenskaya insist on the importance of including strategic goals into the budget process: «The lack of a link between the budgeting system and the company's strategy is the reason of the ineffective motivation of the heads of departments and their employees to achieve the strategic goals of the enterprise» [27, p. 145].

Coming to BPM in a Ukrainian company evolutionally is described in details in [28].

Great majorities of academic texts are limited to clarifying the theoretical foundations; however, modern companies extremely need work with specific recommendations for the implementation of the theory into real practice.

### **3. Business Process «Budgeting»**

In the Ukrainian company, which is under our study, the business process methodology was not well developed. Traditionally, budgeting practices were focused on planning and controlling of sales by product types in terms of costs incurred for its production and sales, not taking into account specific of sales channels, which diversifies cost structure. Ignoring budgeting, accounting and cost analysis at the level of sales channels necessarily led to the loss of control over the total costs of the

product sales process. Uncoordinated forms of budgets of different divisions became a following problem of the company's budgeting system.

Restructuring of the "Budgeting" business process aimed at creation of a stable tool of data aggregation for coordination business strategy and actual accounting system data suitable for controlling procedures by a controlling department. In other words, the methodology for generating the required budget indicators had to harmonize simultaneously the indicators of the business strategy and databases formed in the accounting system. As well, to establish the relationship between the elements of the management system, budgeting, strategic management and accounting system which are considered as data sources.

The next task of the BP is to develop a procedure for compiling budgets and managerial reporting forms, key figures of which correspond with indicators of business strategy and financial reporting forms, compiled according to generally accepted accounting standards. The procedure provides for the responsibilities, executors and terms of execution. The solution of the existing problems has become a key task after the management's decision to automate the budgeting process.

The presented budgeting approach is described at the same time as an element of the company's general information system and as a separate business process that recycles inputs into outputs in order to make budget adjustments quickly and ensure company's growth in the long run period.

The demonstration of the BP "Budgeting" includes the following sequence:

*1. Budget process design (Budget process)*

*1.1. General scheme (Overview)*

*1.2. Budget process - workflow steps*

*1.3. Chart of process timetable*

*2. Input*

*2.1. Budget sales*

*2.2. Finance*

*2.3. Controlling*

*3. Output*

*3.1. Budget Reporting package*

*3.2. Budget presentation*

Let's consider each item in detail.

*1. Budget process design*

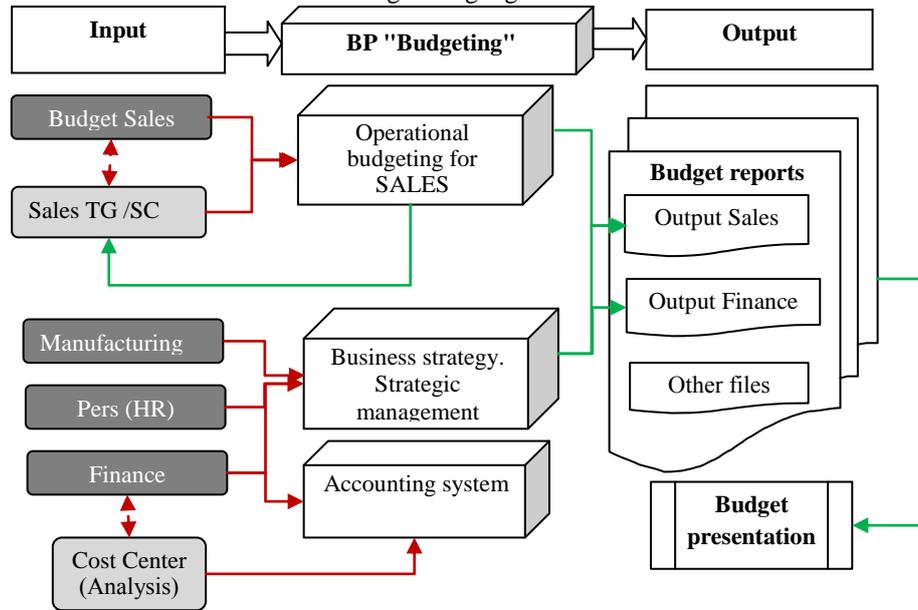
*1.1. General scheme (Overview) (fig. 2).*

Figure 2 illustrates the integration of strategic management units (business strategy) and company accounting system into the overall architecture of the BP "Budgeting", which allows to align each annual budget with the goals of the company's business strategy and rely on actual accounting data.

A specific feature of the approach is the creation of additional budgets of target product groups (TG) and sales channels (SC). Channels include Channel Retail, Direct Sales, Channel Dealer, Channel Web. Since e-commerce is being used more and more widely in the post-industrial era, it makes sense to monitor channels in two directions of B-to-B and B-to-C to determine the most cost-effective.

Therefore, the process approach of the BP "Budgeting" design details the strategic objectives to the cost centre, determines the impact of each of them on the volume and structure of the spent resources, the integration of the accounting system, analysis

and control, establishes an adequate allocation of responsibilities among the owners of the BP. Thus, process approach of the budgeting design focuses on cross functional processes, unites the functions of various departments and services into a general information flow aimed at achieving strategic goals.



**Fig. 2.** Overview of the BP "Budgeting"

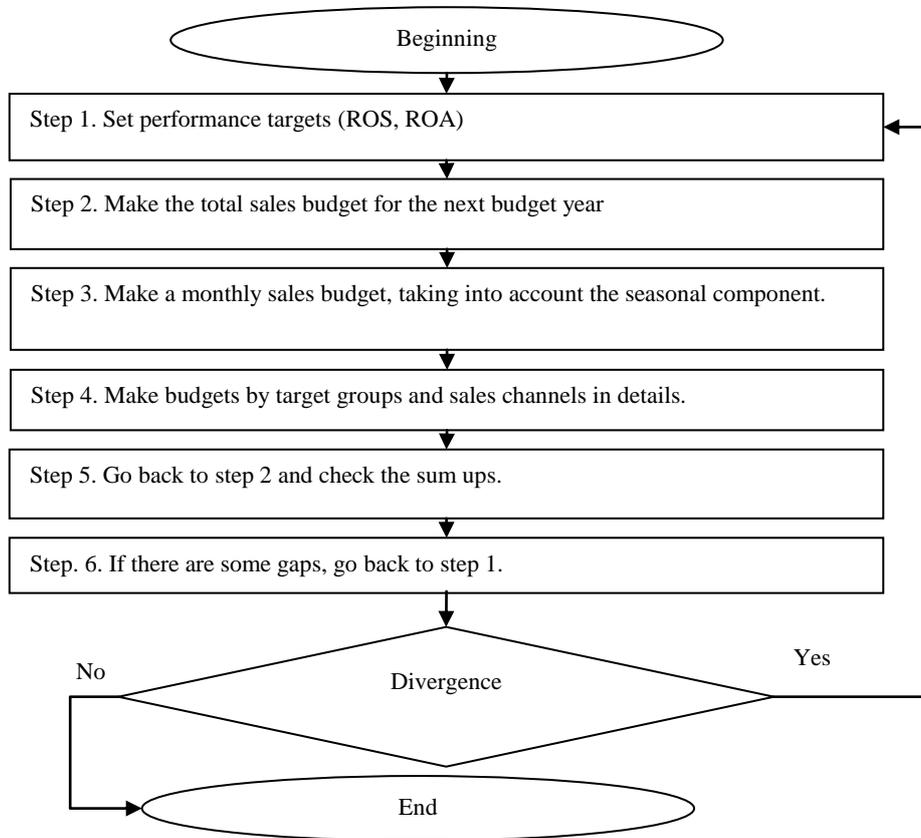
*1.2. Budget process- Workflow steps*

The regulation of the BP "Budgeting" based on the WF includes: the procedure of operational and financial budgets formation, the analysis of the external environment and the establishment of business strategy goals, the timing of data entry and its processing, functions, responsibilities and organization of interaction between units and participants in the budget process.

The budget process can be divided into three blocks. Let's consider them in details. Figure 3 shows an indicative step-by-step algorithm for compiling operating budgets.

The algorithm demonstrates steps of operational budgets drafting created for Workflow, and defines ways for routing. It also establishes the relationship between the steps of Workflow based on exit values. For example, total sales budget for the next budget year is the output of the first step of Workflow. Whereas, the output of each step of Workflow creates its own data path of operational budgets. The algorithm defines how the project architect should simulate the process of operating budgets drafting and integrate Workflow steps into the BP "Budgeting". The implementation of the algorithm will enable to organize Workflow and ensure successful completion of operational budgets to the fullest extent.

The next block of the BP "Budgeting" provides for an analysis of the external environment and the strategic phase of the budget process.



**Fig. 3.** Algorithm for operational budgets drafting of the project Workflow in the "Budgeting" BP

**Block II Analysis of the external environment and the strategic phase of the budget process**

Step 1. Analysis of the current situation

Organising a strategic phase in the budget process.

Step 2. Formation of the target picture based on the company's business strategy, usually for the next five years, taking into account the results of SWOT-analysis

Step 3. Establishing financial and non-financial indicators of the company's development for the next five years, including the budget year (Gross Sales, Operating result, Pre-tax result, Post-tax result, ROS, ROA, I / C Liquidity, Total Assets, Investments, Headcount, FTE-K)

**Block III. Financial budgets**

Step 1. Analysis of relevant information, comparing usually, actual data for the 9 months of the current year with similar data for the past budget year.

Step 2. Make profitability calculation

Step 3. Calculate the key indicators of the cost centres

Step 4. Make a profit and loss budget, specified expenses budgets and financial

results.

Step 5. Make a balance sheet budget

Step 6. Make a cash flow budget

*1.3. Process Timetable*

Process Timetable (table 1), using Workflow class tools, will make each step of the budget process specific and transparent, also will define precise timelines for execution and reporting. Each particular company, based on the submitted form, can add specific performers and responsibilities in order to eliminate the lack of responsibility.

**Table 1.** Process timetable of BP “Budgeting”

BUDGET PROCESS							
	WORKFLOW STEPS	Month					
		July	Aug	Sept	Oct.	Nov.	Dec.
	1. Formation of input information						
	2. Data entry						
	3. Budgets formation						
	4. Preliminary presentation of operational budgets		<b>17.08</b>				
	5. Preliminary presentation of financial budgets		<b>25.08</b>				
	6. Discussion of budgets within BPM						
	7. Making changes in budgets					<b>05.11</b>	
	8. Preparation of the budget for cost centres						
	9. Approval of budgets by the Supervisory Board					<b>25.11</b>	
	10. Presentation of the approved version of the budgets						<b>01.12</b>
	11. Familiarization staff with the budgets for the next year						 

## *2. Input*

### *2.1. Budget Sales*

Only actual data can be as an input for BP “Budgeting” received from the company's accounting system in the necessary analytical sections. The overall sales budget is based on the accepted business strategy and established financial and non-financial indicators of growth for a period that includes the budget year and the subsequent four years. The next form of budget is a specific monthly sales budget for the following year, taking into account the seasonal component. At the level of the general budget, sales are represented by target groups of products that form product types with individual articles and similar functionality. Types of products that are not included in a specific target group are grouped in the “Others”. Simultaneously sales budget is made at the level of sales channels by target groups with establishing a direct relationship with generalizing indicators of the general budget.

All calculations are based on normal prices. While special promotions and offers for individual regions and clients are considered after approval by the Group Controlling of the company.

### *2.2. Finance*

The dominance of accounting for financial reporting according to general accounting standards is observed not only in Ukraine. Accounting data, even if it based on actual data, is often distorted in order to optimize taxation, what bars the company's management from the possibility to operate information for management. However, the language of accounting is the «Esperanto» of business, the base category, in accordance with not only accounting, but also the control and analytical component of management are built. That is why, all the options of interpreting the accounting data within the variety of management concepts, theories and decisions are based on the non-alternative accounting system, which provides collection, fixation and summarization of factual data of the company's activities for preparation of financial statement. The effectiveness of the company's accounting system is determined, first of all, by the possibility of the accounting data analysing obtained from the financial accounting with multi-level managerial levels.

The analysis of current information provides for the compilation of two synchronized Profitability Calculations by target groups and sales channels. Actual data for the compilation of both forms is obtained from the company's accounting system by the relevant analytical sections. The main purpose of the actual information analysis is the identification of profitable and unprofitable types of products and sales channels. To makeup Profitability Calculation it is better to use the method of the margin income determination, but the value of the conclusions and the situation assessment will depend on an adequately organized and normally functioning accounting system of the company, including a properly integrated management accounting module in the financial accounting system. The management accounting module should provide for the data about the variable and fixed costs of each cost centre. Traditionally, cost centres are allocated in the production process. This study focuses on the priority of the process implementation, therefore, we propose to identify sales channels as cost centres whose costs are classified as direct and indirect. This will allow to analyze the profitability of each channel and evaluate the performance of specific employees.

The positive result is achieved through the coordination of two oppositely directed

informational flows. The first flow generates targets that go to costs centres down from the top in the form of strategic indicators. Vice versa, the second flow adjusts the corporate strategy raising information from bottom to top, guided by the actual data obtained at the level of cost centres within the operational management, and establishes a direct and unambiguous connection with the company's development strategy.

The analysis of current information and its comparison with similar data of the past year allows to set target non-financial growth indicators based on real tendencies of increase or decrease in sales volumes of certain product types forming target groups and outlines the necessary measures for increasing the efficiency of sales channels.

The Profit & Loss budget calculates planned financial results by type of activity (operational, financial, investment). Typically, there is an ambition to increase profits by increasing revenue from sales and other income and minimizing costs, but strategic management makes its own adjustments. For instance, a business strategy means expanding a specific market sector, which requires staff and costs increase. Additional costs will be justified if they receive the required level of revenues for a certain period, that is why the budget indicators are based on the analysis of quantitative data for the past years and expert estimates of the possibilities of increasing revenue for a business strategy implementation.

The next step is to detail the budgets of Personnel Expenses and Headcounts, Depreciation and Investments, other operating expenses (Administration, Marketing, Distribution) and the calculation of the planned Financial Result for the next fiscal year.

In order to make up a budget Balance Sheet, actual reporting data for the previous three years is used. In this case, it is advisable to use company's accounting records that are summarized for the financial reporting according to generally accepted accounting standards (national, IFRS). The emphasis is on relevant balance sheet items for each specific company.

The final form of financial budgets is Cash Flow, which defines the net cash flow by type of activity (operational, investment and financial) and net cash flow.

Consequently, the financial budgets involve handling the input data obtained from the accounting system (financial and management accounting), submission of the relevant articles of the monthly financial statements in details. All forms of financial budgets necessarily make up for each business unit. The organization of accounting provides formation of credential database in terms of value at all necessary levels in close integration with the BP "Budgeting" and becomes a prerequisite, as well as a criterion of sufficiency and consistency.

### *2.3. Controlling*

The task of control and analysis is to obtain information about the effectiveness of the business unit activity as well as the centres of responsibility in achieving the planned results and targets and also the reasons for failure of budget indicators.

Controlling Budgets can include three major budgets:

- personnel;
- manufacturing;
- controlling and analysis;

As the efficiency of using the knowledge and competencies of the company's staff

is a priority of modern management concepts, therefore Controlling Budgets / Personnel are identified to control and analyse a business strategy implementation of human resources management, mainly in the area of the costs incurred in training and upgrading the company's employees. However, if this information is contained in other financial budgets, it is advisable not to duplicate the information and leave information in all details for relevant HR sections.

The theoretical model of production budget is rather well known, but in practice there is no single methodology for compiling a production budget package. The budgeting of the production process is influenced by the features of technology, cost structure, assortment product, and organizational structure of the company, and the most important aspect is the inclusion of a production division in a business unit or as a separate unit with its own balance sheet. In the presented example, it is considered that a structural unit engages the production, which is classified as a separate business process with its own cost centres. A separate budget and schedule of production are formed after the approval of sales budgets.

The directions of the company's revenue and expenditure analysis will depend on the company's growth stage. It can be both maximizing incomes and minimizing costs. Since the high level of indirect costs in the overall cost structure is common characteristic of many companies which operate in the post-industrial era, in most cases the analysis is aimed at identifying and eliminating unproductive indirect costs.

With this view, costs are divided into direct and indirect according to not only specific types (target groups) of products, but also sales channels, which are recognized as cost centres in the business process «Realization». Thus, a variable and constant parts are identified within direct and indirect costs according to the activity driver. In this way, concept of ABM / ABC / ABB is implemented.

### *3. Output*

#### *3.1. Package of report forms*

Package Budget reports includes:

Content:

- Sales and COS
- Key Indicators
- Profit and loss comparison
- Other expenses
- Balance
- Headcounts
- Investments
- Cash flow statement
- Key Indicators MRP

BP “Budgeting” provides wide opportunities for forming a package of report forms at all levels of management (strategic, tactical, operational) due to the high integration of subsystems into the company's information system, minimizing of incoming information, tools for consolidating and detailing input and output data, mobile and flexible modelling tools.

#### *3.2. Presentation*

The last, but not least, stage of the budget process is the presentation of a report forms package for the company's management and staff. It is desirable to present using modern tools and technologies.

Forms of operational and financial budgets are the basic material for slides. It is necessary to use the analysis results and arguments in support of the planned activities for the next fiscal year. Information should be available for understanding. A presentation will be effective if each performer has a clear idea “What” he should do and a specific instruction «How».

## **4 Conclusions**

The presented approach considers budgeting within the framework of the BPM concept at the same time as an element of a complex open information system of the company and as an “end-to-end” business process. Thus it extends to multifunctional units and services aimed at achieving the strategic objectives of the business unit.

The presented BP “Budgeting” of the company's activity allows to integrate data into a single information flow of planned (budget) and actual data of the company's accounting system, including financial and management accounting. It can be used as a base regardless of the type and characteristics of the company's activities and size. The proposed design can become a roadmap for the reengineering of the existing company's budget process.

Based on the WF, this approach allows to use effectively time of the participants of the BP “Budgeting”, which helps them to focus on the ability to quickly adjust budgets in order to accelerate the achievement of target performance indicators and identify benefits for the quick business strategy implementation. The practical value of the approach means using it as a foundation in regulations development of the BP «Budgeting» in order to form a hierarchical responsibility system, personification and control of procedures and actions of specific performers with clear deadlines and terms at each step of the process, which guarantees high business process performance. Detailing WF of the BP “Budgeting” provides a convenient quickly respond to dynamic changes in the external and internal environment and adapt to new operating conditions.

The research demonstrates the organization and method of budgeting the best quality with low cost. This model will provide a direct and indirect link between strategic, tactical and operational management levels, using a long time horizon for development goals assessment, between top management and cost centres. The research is based on the dominant view of modern scientists on the activities reorientation of companies on the client, quality and time in the post-industrial era.

Recommendations have practical benefits to companies in case of a management decision to introduce information technology into the budgeting process.

## **References**

1. Investigation of the state and trends of Ukrainian enterprises development. Analytical report for 2014/15, [https://kneu.edu.ua/userfiles/project\\_1314/DoslD196dzhennya\\_suchasnogo\\_stanu\\_ta\\_tendencD196D197\\_rozvitku\\_ukraD197nskih\\_pD196dpriD194mstv\\_2014-15.pdf](https://kneu.edu.ua/userfiles/project_1314/DoslD196dzhennya_suchasnogo_stanu_ta_tendencD196D197_rozvitku_ukraD197nskih_pD196dpriD194mstv_2014-15.pdf)
2. Jun X.: Managing Digital Enterprise: Ten Essential Topics (2014),

<https://www.springer.com/gp/book/9789462390935>

3. El-Kelety, L.: Towards a conceptual framework for strategic cost management .The concept, objectives and instruments. PhD thesis. Chemnitz, Germany: Chemnitz University of Technology (2006).
- 4.. Taylor, F. W.: The Principles of Scientific Management. Dover Publications (reprint of 1911 original) (1998).
5. Hammer, M. and Champy, J. A.: Reengineering the Corporation: A Manifesto for Business Revolution, Harper Business Books, New York (1993).
6. Jeston, J., & Nelis, J.: Business Process Management: Practical Guidelines to Successful Implementations. Butterworth-Heinemann, Oxford (2014).
7. Paim, R., Caulliriaux, H. M., Cardoso, R.: Process management tasks: a conceptual and practical view, *Business Process Management Journal*, Vol. 14 Issue: 5, pp. 694-723 (2008), <https://doi.org/10.1108/14637150810903066>
8. Brocke Jan vom, Schmiedel, T., Recker, J., Trkman, P., Mertens, W., Viaene, S.: Ten principles of good business process management, *Business Process Management Journal*, Vol. 20 Issue: 4, pp. 530-548, (2014), <https://doi.org/10.1108/BPMJ-06-2013-0074>
9. Pradabwong, J., Braziotis, C., D.T. Tannock, J., S. Pawar, K.: Business process management and supply chain collaboration: effects on performance and competitiveness, *Supply Chain Management: An International Journal*, Vol. 22 Issue: 2, pp. 107-121, (2017), <https://doi.org/10.1108/SCM-01-2017-0008>
10. Kaemsap, K.: Mastering business process management and business intelligence in global business. In *Global Business Expansion: Concepts, Methodologies, Tools, and Applications*, pp. 76--96. IGI Global (2018).
11. Rosemann, M., de Bruin, T.: Towards a business process management maturity model. *Proceedings of the 13th European Conference on Information Systems (ECIS 2005)*, Regensburg, 26--28 May 2005. ECIS, (2005).
12. Jan vom Brocke, Sinnl, T.: Culture in business process management: a literature review, *Business Process Management Journal*, Vol. 17 Issue: 2, pp. 357--378, (2011), <https://doi.org/10.1108/14637151111122383>
13. Schmiedel, T., vom Brocke, J., & Recker, J.: Culture in business process management: how cultural values determine BPM success. In *Handbook on Business Process Management 2*, Springer, Berlin, Heidelberg, pp. 649--663, (2015).
14. Kumar, A.: Business process management. Routledge, (2018).
15. Rinderle-Ma, S., Toumani, F., Wolf, K. (Eds.): *Business Process Management: 9th International Conference, BPM 2011, Clermont-Ferrand, France, August 30-September 2, 2011, Proceedings (Vol. 6896)*. Springer, (2011).
16. Scheer, A.-G., Abolhassan, F., Jost, W. and Kirchmer, M.: *Business Process Change Management*. Springer, (2003).
17. Pilecka S.T., Protsyuk D.V.: Formulation of the budget system in the aviation enterprises. *News of Economics of Ukraine (Visnyk ekonomichnoyi nauky Ukrainy) № 2 (31)*, pp. 153--157, (2016).
18. Pyatnychuk, I.D.: Approaches systematization to the definition of budgeting principles and methods. *Scientific and Information Bulletin of the Ivano-Frankivsk University of Law named after King Danylo Halytskyi (Naukovo-informacijnyj visnyk Ivano-Frankivskogo universytetu prava imeni Korolya Danyla Galyczkogo)*, 12, pp. 228-236, (2015).
19. Merenkova, L.O., Matyushenko, O.I.: Types of company budgets and budget planning methods .*Communal economy of cities (Kommunalnoe xozyajstvo gorodov)*, 77, pp. 381--388, (2007).
20. Gnip, N.A.: Organizational-managerial bases of financial planning at the enterprise. *Economic Annals-XXI (Ekonomichnyj chasopys-XXI)*, 2 (1-2), pp. 35—38, (2015).
21. Zakharchenko, S.V.: World experience of budgeting in the system of financial management of enterprises: prospects of use in Ukraine (Doctoral dissertation, Vinnitsa, VNNIE TNEU), pp.

43--45, (2017).

22. Prots N.V.: Features of the implementation budgeting system process. Investments: practice and experience (Investytsiyi: praktyka ta dosvid), 16, pp. 89--92, (2015).

23. Golovatskaya S., Popovich, M.: Methodological and organizational aspects of budgeting by the centers of responsibility of enterprises for the production of beer. 6. Economic Discourse (Ekonomichnyj dyskurs), 4, pp. 36--42, (2017).

24. Pozhuva, T. O.: Budgeting as a direction to improve the management of enterprises. Journal of Economic Science of Ukraine (Vestnyk ekonomycheskoj nauky Ukrainy), 1 (32), pp. 73--77, (2017).

25. Artem, P.: Project-based budgeting in shipbuilding enterprise. *Skhid*, (1), (2014).

26. Ostapenko Y.: The system of budget management in the management of the main organization of water transport. Accounting Region and Audit (Buxgalterskyj oblik i audyt), 12, pp. 41--47, (2015), [http://nbuv.gov.ua/UJRN/boau\\_2015\\_12\\_7](http://nbuv.gov.ua/UJRN/boau_2015_12_7).

27. Bersutska, S.Y., Kamenska, O.O.: Methodical approach to the strategic budgets compilation of the industrial enterprise. Economy Management: theory and practice: St. sciences. etc. - K.: IEP NANU (Upravlinnya ekonomikoyu: teoriya ta praktyka: Zb. nauk. pr.), pp. 144--150, (2015).

28. Yatsenko, V.: Ukrainian Company Cost Accounting System Development from the Evolutionary Theory Position. In: Proceedings of the 14th International Conference on ICT in Education, Research and Industrial Applications. Integration, Harmonization and Knowledge Transfer, Kyiv, Ukraine, 14--17 May 2018, vol. 2104, pp. 207--221 (2018)