

Automation of budgeting of industrial enterprises as the basis for digitalization of internal communication business processes

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Abstract

The purpose of the article is to summarize the theoretical and practical principles of digitalization of communication business processes of Ukrainian enterprises in the framework of digitization of their business.

The article studies the advantages and prospects of the implementation of BAS ERP systems into industrial enterprises activities. The necessity and relevance of automation of clerical business processes of industrial enterprises is proved. The model of digitalization of communication business processes is schematically presented.

The procedure of digitalization of communication business processes of industrial enterprises is formalized by the case of their budgeting automation. The implementation of the author's suggestions makes it possible to disseminate this experience for the activities of other business entities.

Keywords: business processes, communications, industrial enterprises, digital transformation, BAS ERP system.

Keywords: terrorism, financing, problem, specific, anti-terrorism.

Introduction

The current global economic space is rapidly changing and it is now clear that those businesses that refuse to use digital technology will soon disappear from the market. As the leading expert on social and gender programs of the Razumkov Centre Pyshchulina (2019) points out, digitization has many advantages: it is about the multiplicative effects of digitization when all production chains are included in a single information space. The potential positive effects of the digital economy (digital dividends) are provided by powerful analytics campaigns and global forums and, depending on valuation methods, the size of the digital economy is currently estimated at 4.5 to 15.5% of global GDP, and has huge potential for further expansion.

Porter and Millar (1985) noted that information technologies should be understood in a wider sense to cover the information that business created and used, as well as a wide range

of increasingly convergent and related technologies that processed the information.

New business conditions determine the needs of structural changes at enterprises, a new organization of labour and management of production processes, automation of business processes (including clerical processes, which include: accounting and financial reporting, HR management, customer service, etc.).

Nowadays, not just the representation of the business entity in the information space, but its constantly maintained value for consumers is one of the key success factors that ensures highly competitive positions in the market. Ongoing market challenges require industrial enterprises to respond quickly and implement new technological solutions, including the digitization of communication business processes that directly link the manufacturer to the market. It is logical that the more clients there are in the enterprise,

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the more successful it will be.

Analysis of recent research and publications. Domestic and foreign scientists widely study the features of business processes of enterprises and modern problems of their improvement. In particular, Chornobai and Duma (2013) analysed the economic essence of business processes of the enterprise, Garnov (2014) considers various aspects of planning, assessment of performance, organization, management and providing business processes with software products, Netepchuk (2014) studies methodological foundations of business process management, Prokopenko (2020) – business process efficiency in the digital economy, Kopiika (2015) – modelling and automation of business processes, Harrington et al. (2002) – optimization of business processes, Korzachenko (2013) – problems and prospects for optimization of business processes at Ukrainian enterprises, Robson and Ullah (2003) – reengineering of business processes, etc.

Scientists have devoted a number of works to applied aspects of communication activity. In particular, Pocheptsov (2000) researched communication technologies of the twentieth century, Bozhkova (2019) - influence of modern problems of globalization on communication activity of economic entities, Spivak (2002) – the features of modern business communications, Drahomirova et al. (2011) – the introduction of electronic systems in business communication, Kiryev (2014) – the typology of business communications of innovative-active industrial enterprise, Filippova and Bashynskaya (2012) – internal tools of marketing communications of industrial enterprise, Tyelyetov and Ivashova (2009) - assessment of quality of communications of industrial enterprises on the example of

chemical industry.

But in our view, scientists have not sufficiently explored the particularities of digital technology adoption in enterprises in the context of their interconnection with the communication business processes that are emerging (or being altered).

One such tool for the primary digitization of business is budgeting, which incorporates certain types of communications.

Garnov (2014) notes that the development of management techniques will gradually lead to a modification of budget management. Taking into account 85 years of foreign experience in budgeting application, it can be argued that budgeting is one of the most effective technologies for most modern enterprises of any size and that there are no reasonable alternatives yet.

Therefore, the issue of automation of industrial enterprises budgeting as the basis for digitalization of internal communication business processes, in our opinion, is not fully highlighted in the scientific literature and requires justification from the point of view of modern drivers of economic development.

Focusing on communication business processes (as important in the context of globalization of the world markets) in the introduction of digital technologies in enterprises (in our example, this is automation of budgeting) is new to the research on this issue. This approach provides a more accurate way to understand the essence of changes in the business model of enterprises that take place with the introduction of digital technologies and to increase the effectiveness of communication with stakeholders (which is relevant in today's business environment).

Material and methods.

The theoretical analysis of information sources, methods of analysis, synthesis and generalization were used to achieve the goals of the study.

The purpose of the article is to summarize the theoretical and practical foundations of digitalization of the communication business processes at Ukrainian enterprises. According to

the purpose, the following tasks are formulated:

- to study the advantages and prospects of the implementation of BAS ERP system into industrial enterprises activities;

- to formalize the process of digitalization of communication business processes by case study of automation of industrial enterprises' budgeting.

Results and discussion

As practice shows, automation of the processes of one department, with seven employees, saves approximately 1800-3600 working hours per year (*Automatization, 2020*). At the same time, such innovations can not only save resources but also reduce the administrative burden, improve the quality of communication business processes and provide acceleration of the department activities.

Let us consider the procedure for implementation of budgeting automation as the basis for digitalization of internal communication business processes based on the implementation of the BAS ERP system. The main functional characteristics of budgeting within BAS ERP system are as follows:

- creation and support of models;
- display of actual data;
- data processing within the model;
- detailed data analysis;
- customization of the types of budgets and advanced analytics;
- scenario modelling;
- management of the budget process;
- table input forms and corrections;
- analysis of achievement of planned targets.

The implementation of BAS ERP system allows the gradual transition from the managing manufacturing enterprise (MME) to the digitalization of business (including communication business processes). This provides:

- customization of budget model;
- formation of budget items on revenues and expenditures;
- creation and customization of budgets types;
- detailing the actual data for managing manufacturing enterprise (MME);
- integration of MME and BAS ERP;
- detailing (refinement) the actual data into BAS ERP;
- display of actual data of budget turnover;
- forming a detailed report due to the budget model;
- setting planned targets of budget revenues and expenditures;

detailed sales planning with regard to key analytics indicators.

Customization of a budget model provides the following:

- 1) specification of the budgeting model itself, which determines the use of key analytics indicators of budgets by the organization as a whole and by individual departments;
- 2) budgets approval and the use of user statuses in the document.

The formation of budget items on revenues and expenditures is carried out by using the maximum set of analytics indicators. For example, it is possible to continuously monitor indicators by various types of activities:

- by products (brands, range, etc.);
- by sales (income from the sale of goods, partners, etc.);
- by strategic business units (by business regions, subdivisions, areas of business, etc.).

The system provides the creation and customization of various types of budgets. The budget type determines the hierarchical structure of the items, which are combined into groups, as well as their analytics indicators, and it is used for the purposes as follows:

- table input forms in document;
- formation of budget reports.

Integration of MME and BAS ERP system ensures:

- 1) implementation of the continuous transfer of documents data on detailing (refinement) and related nomenclature and reference information in BAS ERP;
- 2) demonstration of indicator movements (detailing (refinement) documents entered into the MME do not perform movements during the execution, and the data in the registers are displayed after loading into BAS ERP);
- 3) archived information (nomenclature and reference information (NRI) is transferred from MME in limited data, which were used in the selected period to reflect the fact; garbage and outdated NRI remains for history and analysis in MME);

4) data normalization (new NRI is automatically created in BAS ERP and is connected with the MME data thereby normalization takes place (tidying up the data contained in the reference guide) without manual input by users).

At the initial stage, the necessary exchange of NRI and primary integration is customized due to the possibility of combining BAS ERP and BAS Document turnover of CORP in terms of seamless integration, as well as data synchronization. It is a successful solution to start the following automation goals.

Let us describe schematically the organization of digitalization of communication business processes within the case study of budgeting automation of the Elfa Group of Companies (Elfa Pharrm Ukraine), which is one of the largest cosmetic holdings in Ukraine and is engaged in research, development, production and distribution of cosmetics (Figure).

The first stage of digitalization of communication business processes based on the automation of budgeting of industrial enterprises includes the identification of the problems of a particular business entity that should be eliminated/reduced. For our example, the tasks are as follows:

- to reduce the duration of the approval and agreeing processes of internal and external documents by decision-makers;

- to reduce the number of manual data processing errors during data entry (including, in Excel);

- to accelerate the transformation of actual data for analysis of various types of analytical indicators;

- to optimize the processes of accounting and displaying of actual data for different levels of decision-making;

- to build a modern integrated information system for managing an enterprise;

- to automate the budgeting process to improve the management of business processes as a whole.

So, the primary goals are as follows:

1. To organize budgeting processes for a group of companies.

2. To replace Excel, reduce the amount of manual data processing errors.

3. To transform the actual data to analyse the general model of the budget of revenues and expenditures for all types of analytics indicators.

4. To automate the budgeting process using BAS ERP with purpose to ensure the decoding and detailing (refinement) of top-level indicators.

The next automation goals will be as follows: Consecutive transition to accounting and display of actual data at the BAS ERP level.

Increasing the level of process control using BAS Document turnover of CORP.

At the second stage, the model of business processes digitalization is formed (with subsequent support), which allows the following:

- displaying actual data for different levels of management in table input forms with the ability to enter information and refining;

- carrying out data processing within model;
- advanced analytics (e.g.: of different types of budgets);

- conducting a detailed data analysis (including with the use of archival data), first of all, analysis of the achievement of planned targets;

- displaying of the scenario modelling;
- computer-assisted management (e.g.: of the budget process).

The third stage of implementation of the model covers:

- presentation, detailing and synchronization of actual data in a document (e.g.: in budget turnover);

- determining of planned indicators (e.g.: revenues and expenditures of budgets);

- revenue/sales planning with details on key analytics of forming;

- preparing a detailed report on the model (e.g.: budget one);

- integration of the model with the existing practice of managing a manufacturing enterprise.

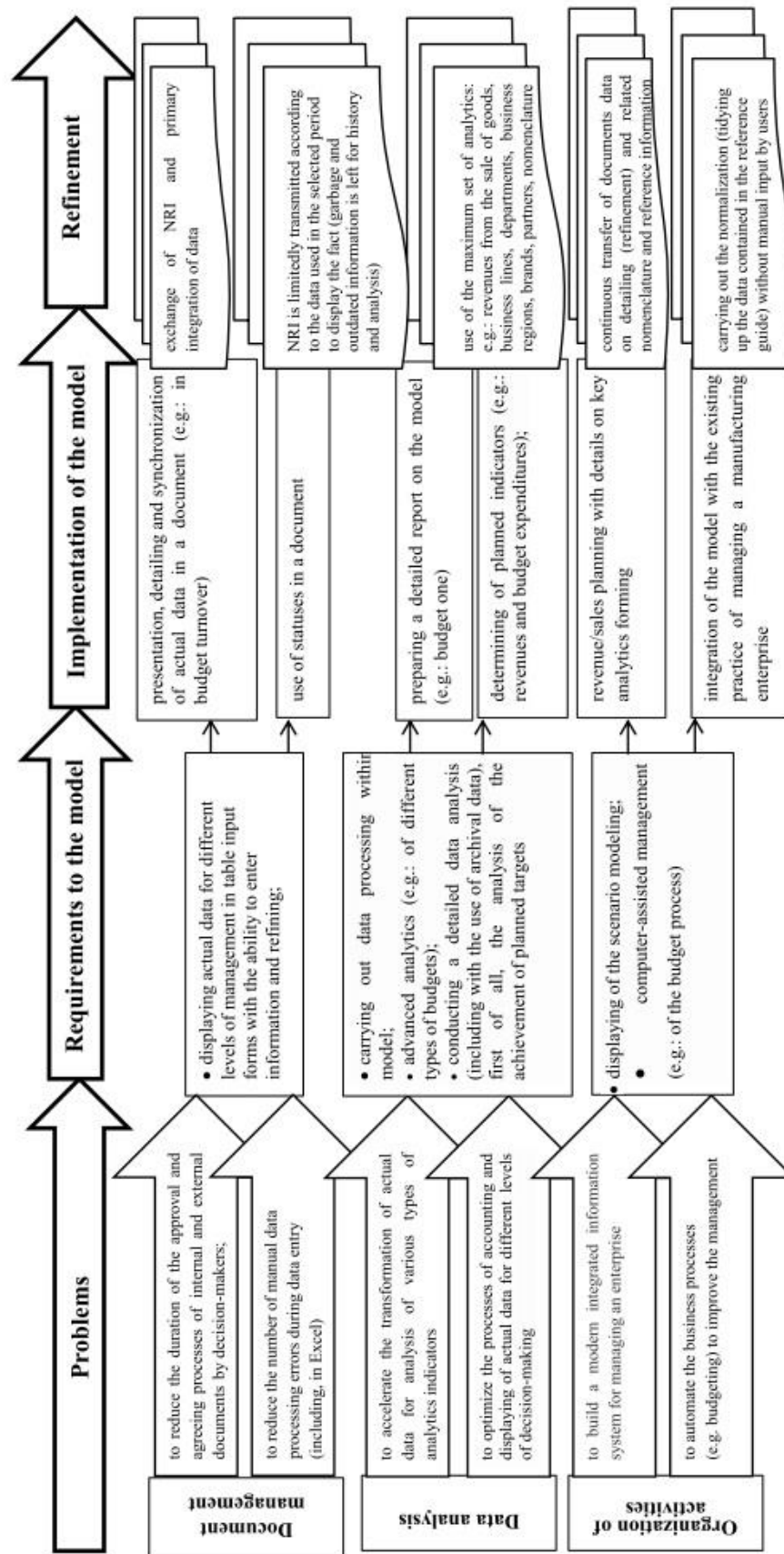


Fig. Digitalisation of communication business processes by the case of automation of budgeting industrial enterprises

The implementation of the BAS ERP system allows maintaining the necessary degree of detailing (refining) of the actual data. For MME, the documents are developed in order to display the actual data regarding the budgeting. As for the BAS ERP, the documents are integrated, customized and processed concerning:

detailing (refining) the revenues by business lines;

detailing (refining) the expenditures by the area of activities.

The document "Display of factual data" is developed and processed in budget turnovers in order to use actual data in budgeting. This document uses new indicators of NDI BAS ERP and allows fully use of the standard functionality.

Within preparing a detailed report on the budget model there can be customized the reports as follows:

1) budget reports for the analysis of the costs of departments with help of the constructor of budget type;

2) detailed report for receiving all data within scenario according to the structure of

analytics of budget items.

Sales planning is carried out with detailing (refinement) by key analytical areas:

the implementation of the product planning mechanism;

sales plan (which forms the necessary turnovers by the budget item for sale of goods).

Through the use of implementation of such model of management automation at industrial enterprises:

each head of the department of the enterprise will receive detailed actual data (e.g.: on revenues and expenditures of department);

there will be organized the central planning by using the maximum set of analytics (e.g.: revenues and expenditures by responsibility centers budgeting / brands / business regions / lines of business/organizations/nomenclature);

there is carried out the transformation of actual data and customizing of analysis (e.g.: the general model of the budget of revenues and expenditures);

automated management process (budgeting by using data to a lower level).

Discussion

Automation of budgeting of industrial enterprises is one of the necessary steps of modern business entities on the way to digitalization of all business processes. Traditionally, budgeting is considered in terms of financial activity and at first glance it is not related to communications, but a detailed study demonstrates another: communication

business processes permeate the vast majority of businesses and require separate analysis. In this study, we highlighted the problem of integrating business communication processes and formalizing their management with the introduction of digital technologies into enterprise budgeting.

Conclusions

Thus, according to the results of the research, it is possible to conclude the following:

the study of the advantages and prospects of implementation of BAS ERP systems into the industrial enterprises activities made it possible to justify the need and relevance of automation of internal business processes of industrial enterprises;

formalization of the digitalization process of communication business processes by the case study of the automation of budgeting of

industrial enterprises makes it possible to disseminate this experience for the activities of other business entities.

Automation of budgeting of industrial enterprises is one of the necessary steps of modern business entities towards digitalisation of all business processes. Further research may consist in reasoning these areas of the organizational and economic development of domestic enterprises.

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