International Journal of Recent Technology and Engineering (IJRTE)
ISSN: 2277-3878 (Online), Volume-8 Issue-4, November 2019

The Innovative Technology for Modeling Management Business Process of the Enterprise

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Abstract*: The article presents recent innovative technology for modeling business processes of enterprises based on process management. The paper considers the creation and justification of the updated methodological and analytical tools for assessing, selecting and regulating the production system of administration of an enterprise project portfolio in a single operating management system. The application of the process approach is based on a comprehensive, systematic review of the enterprise as a set of processes, the development of a process management system using the principles of ISO 9000: 2000. The new process approach is proposed that allows excluding routine operations from the actions of employees, increasing the speed of employee interaction, effectively optimizing existing business processes, and quickly rebuilding the enterprise's business processes in response to significant changes in business conditions. The work identifies executable business processes, proposes a new approach to modeling the business processes of an enterprise, gives examples of problems associated with the new approach, and suggests possible ways to solve them. Criteria for the results of simulated business processes are defined that allow linking the target indicators of a balanced scorecard of the enterprise with the established results of business processes. It is proved that the use of this recent innovative technology for solving scientific and practical problems of enterprise management significantly expands and deepens the possibilities of economic analysis in the process of solving problematic situations and makes management decisions more grounded and effective.

***Keywords*: business process, management systems, process approach to modeling, technology modeling business processes**

Manuscript published on November 30, 2019.
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I. INTRODUCTION

The modern innovative technology for modeling business processes should be based on the concept of process-oriented accounting of enterprise expenses. It is closely connected with such management concepts as total quality management (TQM), enterprise resource planning (ERP), workflow management system (WFM).

To apply the process approach at the enterprise using the principles of the ISO 9000:2000 standard, the organization needs:

– identify the processes necessary for the quality management system, and their applications within the organization;

– determine the sequence of these processes and their relationship;

– determine the criteria and methods necessary to ensure confidence that both these processes themselves and their management are effective;

– provide confidence in the availability of resources and information necessary to support the implementation of these processes and their monitoring;

– observe, measure and analyze these processes;

Implement the measures necessary to achieve the planned results and continuous improvement of these processes.

In recent years, the approach to process automation has changed. If the task of traditional systems of process automation was to simulate the business processes of the enterprise, then the task of modern, currently required systems is the direct execution of business processes in a computer environment. In the development and implementation of such systems, there are some problems associated with the automation of the enterprise management process. Traditional approaches of the theory of process approach which solutions do not give. The new process approach is proposed that allows excluding routine operations from the actions of employees, increasing the speed of employee interaction, effectively optimizing existing business processes, and quickly rebuilding the enterprise's business processes in response to significant changes in business conditions. The qualitative changes are taking place in the automation of the process management of modern enterprises in recent years. New software products have appeared on the market designed to automate modern enterprises at a fairly high level.

Traditional works in this area [1-3] are devoted to the development of methods for studying existing production activities, identifying repetitive chains of actions, formalizing and combining these chains into finished business processes.

Scientific work [4] explores ways to change business processes that are implemented at the enterprise so that the efficiency of the enterprise increases. But the author of this work does not consider the automation of the execution of business processes.

The articles [5] and [6] are devoted to the use of computer systems, which are limited to modeling business processes and changing constructed models. It is assumed that after the development or modification of a business process, its implementation in the organization will occur without the actual execution of this process on a computer.

At present, the degree of equipping modern enterprises with computer equipment allows all employees of the enterprise to create such automated workplaces that allow interacting with enterprise-wide systems that not only simulate, but also directly execute business processes in a computer environment.

The authors of the work [7] describe the benefits that the company receives when implementing business processes that are actually executable in computer systems. In this case, additional problems appear, the solutions of which do not give the traditional theory of the process approach.

In works [8–10], there are studied the role of business process reengineering, and considering the methods of reengineering business processes.

The articles [11] and [12] are devoted to the analysis of theoretical studies of the peculiarities of the application of methodical approaches to assessing the effectiveness of business process reengineering at a modern enterprise.

Authors of [13] examine traditional organizational and functional structures of enterprise management systems.

The authors of the work [14] describe the mechanisms of resource and product flows running and distribution on the given enterprise business process network using special analytical tools. That made it possible to ensure a high level of formalization of corresponding information channels. The result is an integral model of resource distribution and consumption in the process network of industrial enterprise.

In the work [15], the authors develop the advantages of the process approach, including the direct execution of business processes in a computer environment.

It is necessary to consider main advantages in more detail. Figure 1 shows a graphical representation of advantages of the process approach.

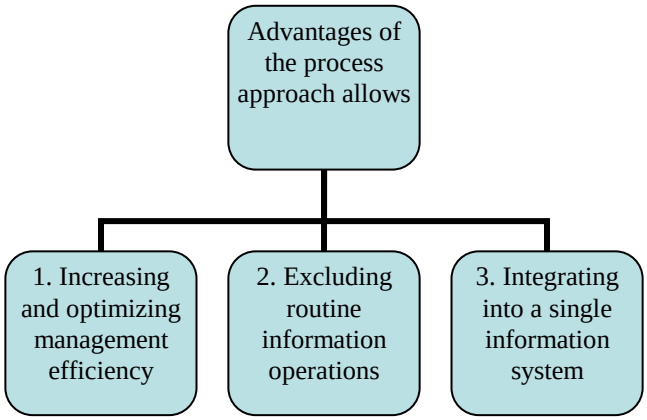

Fig.1. Advantages of the process approach

The first advantage of the process approach allows increasing management efficiency by reorganizing the business processes of the enterprise in response to significant changes in business conditions, as well as by optimizing existing business processes in stable periods.

The second advantage of the process approach allows excluding routine operations, ineffective procedures associated with the search and transmission of information from the actions of employees, significantly increasing the speed of employee interaction. This advantage allows significantly increase the productivity of workers.

The third advantage of the process approach allows using modern means of process automation to solve the problem of integrating heterogeneous enterprise systems into a single corporate information system.

The recent innovative technology automates the process management of enterprises. This is a special class of computer systems has appeared which is called business process management systems (BPMS). The main task of such systems is to distribute tasks to performers and monitor their implementation. The sequence of tasks is determined by the business process diagram, which can be developed and further quickly modified using the business process editor. This diagram is similar to a block diagram of an algorithm. The scheme moves the control points. In circuit nodes tasks for performers are generated.

The modern BPMS should be provides the following areas:

- Development of business processes in a graphical environment.
- Execution of instances of business processes.
- Monitoring the status of business processes.
- Maintaining a history of business process events.
- Grading applications using connectors to external systems used by business processes.
- User administration.

II. PROPOSED METHODOLOGY

A. General description

For business processes executable in a computer environment, a definition of a business process (administrative regulation) is required, which could easily be translated into a representation understood by a computer. For this, it is convenient to use mathematical concepts.

The authors of the work [9] formalized the definition of an executable business process. An executable business process is determined by setting the following levels of consideration:

1. Control flow perspective
2. Data perspective
3. Resource perspective
4. Operational perspective

The level "Control flow perspective" corresponds a business process diagram. The data perspective corresponds to a set of business process variables. The resource perspective corresponds to a set of performers who can perform tasks in the nodes of the business process diagram. The operational perspective corresponds to a set of elementary actions performed by performers within the framework of a task.

Figure 2 shows a scheme of traditional business processes.

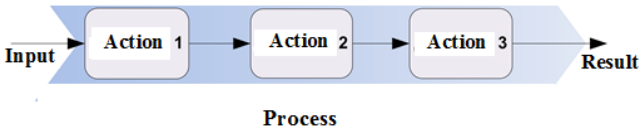

Fig.2.Traditional scheme of business processes

The traditional business process is a sequence of actions aimed at obtaining a given result, valuable to the enterprise. The process approach is the most effective method of organizing the effective operation of an enterprise. The essence of the traditional process approach is the presentation of the organization as a set of interconnected business processes.

Figure 3 shows a graphical representation of a process approach to modeling of enterprise management. The company is building a system of effective horizontal connections. The focus of senior management is the internal environment of the company called the process system. Management of units takes place on the "input" and "output". "Output 1" is the "Result 1"of "Process 1" and the "Input 2" for "Process 2".

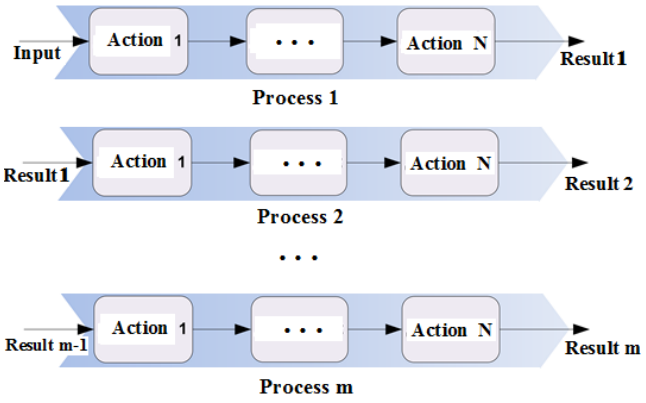

Fig.3. Process approach

The concept of process management of an organization considers business processes as special resources of an enterprise that continuously adapt to constant changes. An executable business process can be started. In this way, running instances of the business process are created. Differences between a business process definition and a business instance the process corresponds to the difference between the type of the variable and the variable instance of the traditional programming language. The business process definition contains a business process diagram, types of variables, role names.

In a running instance of a business process, the diagram contains moving control points; an instance of a business process contains specific values of variables whose types correspond to the types of variables of a business process definition. In business process instances, specific job performers are assigned to roles.

It is necessary to analyze in more detail the levels of consideration of an executable business process. The control flow perspective is a diagram of a business process. The business process diagram consists of a directed graph and possible additional constructions. The directed graph is a set of nodes interconnected by transitions.

Figure 4 shows a traditional modeling of business process based on a process approach.

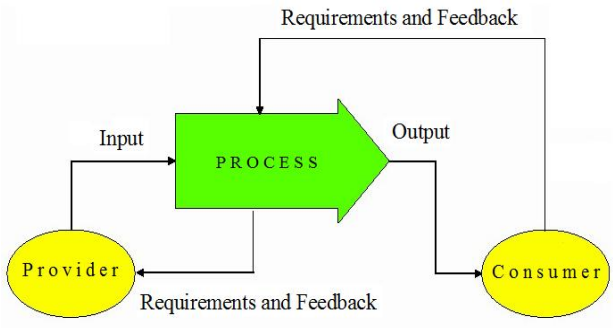

Fig.4. Traditional model of business process

Business process nodes can be of three types: process steps, route nodes and combined nodes, which are a merge of a process step with one or more route nodes.

The transition point moves the control point. In route nodes, the direction(s) of further movement of the control point(s) is selected. Process steps are action nodes or additional nodes.

In the action node, BPMS give the task to the executor (employee of the organization, group of employees or the information system) and waits for a response (message that the work has been completed). After the executor answers, the control point moves along the transition to the next process node. To the node to which the process step corresponds, one inbound and one outbound transition are adjacent.

The route node corresponds to the appearance, deletion, branching, merging of control points or the choice of transition along which the control point will be moved further. Based on the rules contained in the route nodes, BPMS select the next node(s) to which the control will be transferred. More than one inbound or outbound transition is associated with these nodes.

The running instance of a business process can have multiple management points at the same time. In accordance with the business logic of the process, the control point in the route node can be divided into several management points; control points can wait for each other in another route node and then merge into one control point.

Combined nodes are the merging of a process step with one or more route nodes. For example, when merging an action node with a route node located behind it, which selects one of several possible directions, only the action node is placed in the circuit and transitions that should leave the route node are directly connected to it.

Elements of additional constructions are not elements of the graph, however, transitions and route nodes can be attached to these elements, in some cases, and transitions can cross the boundaries of these elements.

Examples of such constructions are events, areas with interruption, encompassing steps of a business process. When a control point is located inside an area with an interruption, an event may occur. In this case, the control point can immediately move from any node inside the region to a route node connected to the region and continue to move from it along the transition connected to it.

In a business process, nodes may exist that correspond to the process step, but are not action nodes. For example, waiting nodes in which tasks are not given to the executors of the process, BPMS simply expects these nodes the occurrence of a certain event, after which the control point goes further. There may also be sub process nodes in the business process diagram.

There can be several management points at the same time in a business process that is running. In accordance with the business logic of the process, the control point in the route node can be divided into several control points. Control points can wait for each other in another route node and then merge into one control point.

The perspective of the business process data corresponds to a set of variables. Each instance of a business process contains specific values for the variables from this set. In particular, the value of a variable can be a link to data located in an external information system.

The exchange of information between the steps of a process takes place using business process variables. In turn, the variables of the business process can be incoming and outgoing parameters during the interaction of BPMS with other information systems of the enterprise. Thus, a business process can transfer information in a corporate information environment between heterogeneous information systems.

The standard ISO 9000:2000 provides for the classification of operational processes in the form of nine areas of knowledge for project management. The generalized idea of the operational processes of project management is presented in table I. From the point of view of the process approach, all operational processes must have their owners and performers. In organizational systems, this is personnel grouped into various organizational structures.

Table- I: Classification of operational processes

Process parameters	Planning	Execution	Control	Completion
Integration	Project Management planning development	Direction and management of the project implementation	Monitoring and management of the project; General change management.	Project close
Contents	Content planning; Definition of content.	–	Confirmation of content; Content management	–
Terms	Determining the composition of operations; Defining relationships operations; Estimated resource operations	Estimation of the duration of operations; Network Design	Schedule management	–

Cost	Valuation. Cost Budget Development	–	Cost management	–
Quality	Quality planning	Quality assurance process	Quality control process	–
Staff	Human resource planning	Recruitment of the project team; Project team development	Project team management	–
Communications	Communication planning	Spread of information	Performance reporting; Project participant management	–
Risks	Risk management planning; Qualitative risk analysis; Risk Response Planning.	Risk identification	Monitoring and risk management	–
Contracts	Planning for purchases and acquisitions; Contract planning	Request information from sellers. Sellers Choice	Contract administration	Contract close

B. Process approach to modeling

The connection of business process nodes with task performers is established using roles. This role is created and mapped to certain nodes of the scheme in the development of a business process. It is necessary to determine the executors for the roles during the execution of the business process instance in the BPMS.

Initialization of a role is an assignment to a role of a specific executor. There is a problem of choice specific executives to whom the task will be sent during the transition from modeling business processes on a computer to the execution of business processes in a computer environment.

To solve this problem, in many BPMS, a hierarchical organizational structure of the enterprise is defined and roles are initialized by specifying the parameters of this structure. Sometimes the role initialization procedure is carried out from BPMS to some other enterprise information system.

Both of these approaches have disadvantages. Setting up a remote function call from another information system is usually technically difficult. Defining the hierarchical organizational structure of an enterprise within an BPMS also does not always help. Using this structure, it is easy to initialize roles that correspond to the hierarchy of administrative management, but it is difficult to initialize roles that are not directly related to administrative management.

To solve the problem, it is proposed to use the mathematical concept of “binary relation”, which was proposed by the authors in work [12]. Such a “binary relation” can be considered as a generalization of the concept of function.

The binary relation between the sets A and B is any subset R of the Cartesian product of the set A by the set B. Often, to denote the membership of an ordered pair.

Some (but not all) binary relations correspond to functions. We can define the function as such a binary relation *R*, in which each value b of the ratio *aRb* corresponds only one single value of *a* (but not vice versa).

It is necessary to expand the possibility of initializing roles with the help of binary relations for the situation when, according to the already known task performer, it is necessary to determine the performer of one of the following tasks. For example, it may be the direct supervisor of the employee who submitted a certain application, or an employee of the personnel department who is responsible for maintaining the personal files of a particular employee. When using binary relations over a set of executors of tasks of a business process, the procedure for appointing possible executors of a task becomes quite simple and it is easy to implement it directly in the BPMS.

The principle of the role initialization procedure is as follows. There are all pairs of binary relations for a well-known executor, in which this executor is located on the right side of the relation. Then, a set consisting of all the left parts of the selected pairs is considered. This set initializes the role. The simplicity of the assignment procedure follows from the fact that any relation over a finite set of task executors can be defined by a multitude of pairs and there is no need to check any restrictions (as, for example, only one function values for one argument).

It is inconvenient to set relationships by listing all the user pairs that define it, since there can be many such pairs. It is necessary to define a group of users to reduce the amount of input data. User groups are used to combine users on any basis. Some groups may contain other groups. Usually a group inherits the properties of all the groups in which it belongs.

Consider an algorithm that allows initializing a role using a binary relation. Figure 5 shows generalized scheme of the proposed technology based on the process approach for modeling business processes.

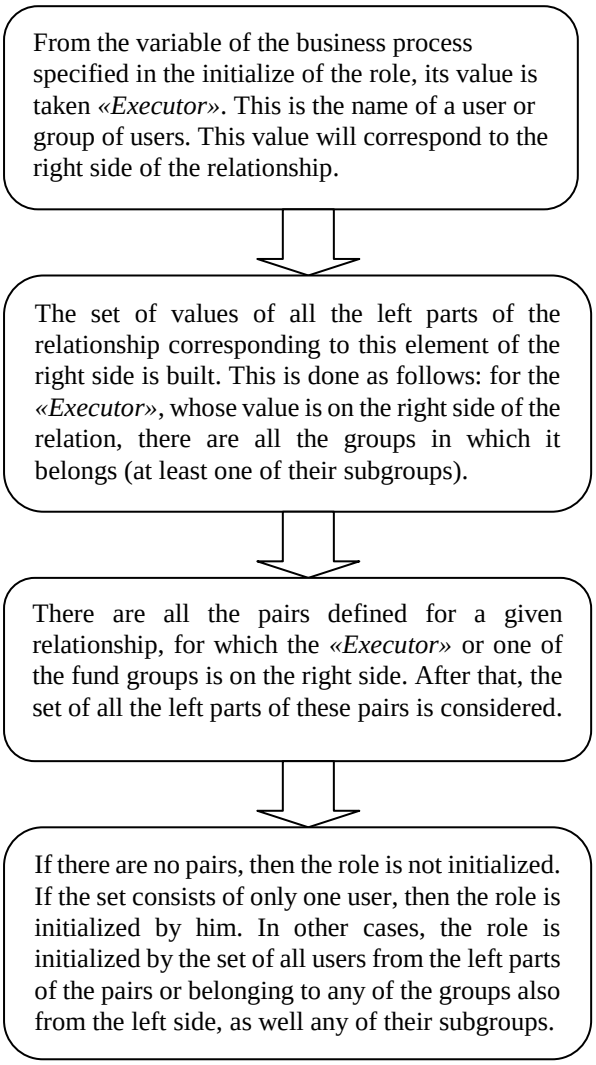

Fig.5. Generalized scheme of the proposed technology for modeling business processes

Such an algorithm allows using a relatively small number of pairs to set fairly complex relationships.

During the application of BPMS in enterprises, situations arise when the executor, who must execute the task, is not able to complete it, for example, he falls ill, is on vacation or a business trip. This problem can usually be ignored when modeling business processes, but it becomes critical in the actual execution of business processes. The inability to complete the task leads to a stop of the business process instance, failure to meet the deadlines, violation of obligations and other troubles. In such cases, the BPMS uses a user replacement procedure, and the task is redirected to another user. Using the substitution of users, it is possible to ensure that the reliability of the BPMS is higher reliability of the operation of its constituent elements (executors).

There is a need to build a user replacement system by importing the organizational structure of the enterprise into the BPMS. The problem arises of determining substitution functions based on the position of employees in the administrative system of enterprise management.

Both of these solutions are inconvenient. In the first decision, the organizational structure of the enterprise is a separate entity and it is undesirable to place it in the BPMS, because it is used in other enterprise systems (ERP, CRM, etc.). In the second solution, in the case of using program code, the business process becomes inconvenient for modification.

But the main thing is that such decisions are inconvenient for managers, because it does not correspond to their thinking. In the case of substitutions of task performers, managers are much more comfortable thinking “in terms” of people, rather than “in terms” of business processes. It is more convenient for managers not to analyze all business processes in which the replaced user can theoretically participate and change the settings in them, but to explicitly set the substitution in the user's properties, indicating such conditions under which the substitution will be performed.

It is proposed to configure the mechanism of substitution of task’s executors on sets of substitution rules related not to business processes, but to users of the system. An ordered set of substitution rules is compiled for each user. These rules are sequentially scanned until a suitable substitution rule is found, or it becomes clear that there are no suitable rules.

The rule for appointing a deputy contains a function over the organizational structure of the enterprise, which returns the deputy.

The each rule has the following parameters:

- Replaced User (User),
- Deputy (function over the organizational structure, returning the User)
- Rule (whether the formula is applicable).

Example assignment rules Deputy:

- Johnson,
- Jackson,
- (Role = "Inspector of the Human Resources Service") & (Business process = "sick leave").

User can have one of two states “Active” or “Inactive”.

The deputy mechanism applies only to users who have the status "Inactive". In this case, from the list of rules all deputy’s rules related to this User will be selected, then from these rules the first in order Rule will be selected, which is applicable (the formula in the "Is the rule applicable" is executed) and Deputy in which has the status "Active". This task will be redirected to the list of tasks of this User (Deputy).

There may be situations in which the User will not have a Deputy. The use of this deputy mechanism has shown good results.

C. Proposed technology

There is a problem of “explosive” growth in the number of management points in an instance of a business process. It is necessary to consider the results of modeling the most popular elements of business processes in accordance with the international standard UML for the subsequent presentation of the problem. Figure 6 shows a graphical representation of node “Action” for executable business processes. Such node is indicated by a rounded rectangle, in the centre of which the name of the node is written.

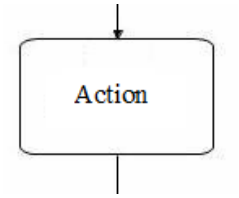

Fig.6.Graphical representation of business processes node "Action"

Figure 7 shows a graphical representation of route node "Branching". Such a node should have one incoming and several outgoing transitions. In this node, for each control point that arrives at it, a choice is made according to which of the outgoing transitions it will be transmitted further. It is designated by a rhombus.

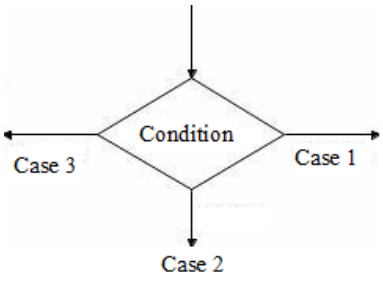

Fig.7.Graphical representation of business processes node "Branching"

Figure 8 shows a graphical representation of route node "Compound". Such a node should have several incoming and one outgoing transition. In this node, all control points that came to it are sent along the outgoing transition. It is designated by a rhombus.

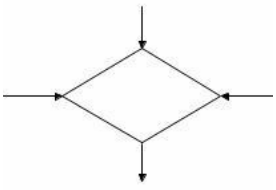

Fig.8.Graphical representation of business processes node "Compound"

Figure 9 shows a graphical representation of route node "Separation". Such a node should have one incoming and several outgoing transitions. For a control point that has arrived at the node, it generates a control point for each outgoing Transition. All generated control points are then executed in parallel. It is designated by a black rectangle.

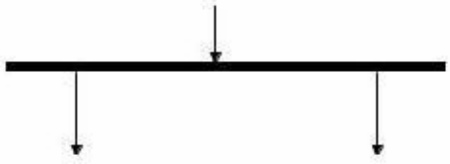

Fig.9. Graphical representation of business processes node "Separation"

Figure 10 shows a graphical representation of route node "Merge". Such a node should have several inbound and one outbound Transition. The node awaits the arrival of control points for upstream transitions. After that, all incoming control points are destroyed, and one new control point is generated for the outgoing transition. It is indicated by a black rectangle.

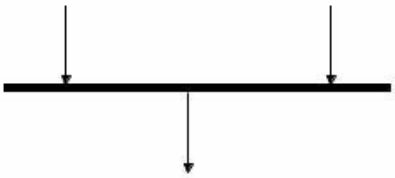

Fig.10.Graphical representation of business processes node "Merge"

If not set restrictions on a combination of circuit elements on a business process, it is possible to create combinations of such elements, which the control point in the cell-division is transformed into a number of "parallel moving" control points. Further, after passing through the connection element, they will turn out to be control points going one after another along one transition. An example of such a situation is shown in Figure 11.

If in a business process it is possible that there are several successively moving management points along one transition, and then the description of the node "Merge" must be clarified. In accordance with the most universal approach, in this case, for each incoming transition, the control point arriving at the node "Merge" becomes a queue.

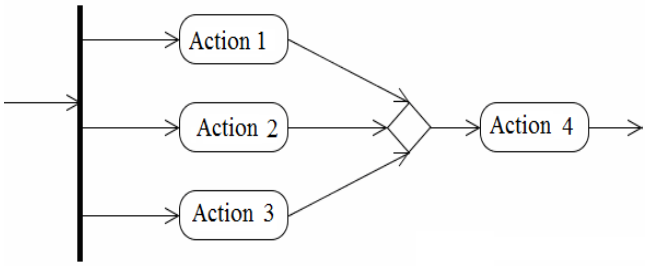

Fig.11.Graphical representation of business processes scheme "Appearance of successively moving control points"

If for all incoming transitions to the node "Merge" their queues are filled with at least one control point, then all control points located at the first position of the queue of each transition are destroyed and one control point is generated at the exit from the merge. All other points that are in the queues in the "Merge" are moved one position forward.

There may be instances of business processes in which, due to design errors, the number of control points increases dramatically over time. Such a situation is possible in the absence of restrictions on the behaviour of the node "Merge" when combining elements in the business process diagram. Such processes can create an exorbitant load on the system, which will lead to the termination of its normal operation.

Figure 12 shows an example of a portion of the business process scheme with a rapidly growing number of management points.

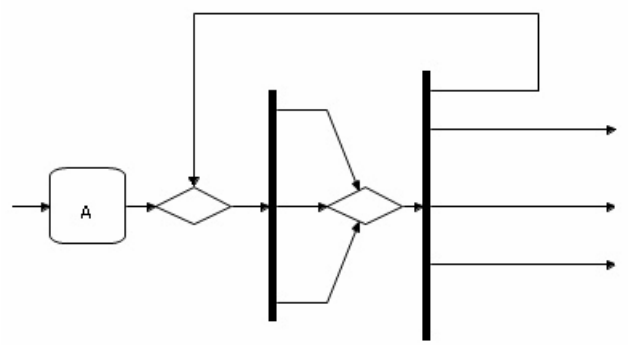

Fig.12.Graphical representation of business processes scheme with a rapidly growing number of management points

To avoid a situation with a rapidly growing number of management points when executing an instance of a business process, various approaches are possible.

The first approach proposes to develop criteria, the application of which to the business process diagram at the design stage will lead to one of the following criteria values:

- a situation with an infinitely increasing number of control points is not possible;
- a situation with an infinitely increasing number of control points will necessarily arise;
- a situation can arise (but not necessarily) with an infinitely increasing number of control points depending on the values of the data being specified.

In this case it is possible to programmatically disable this import business process execution environment. These developed criteria should be easily implemented in the form of an algorithm so that they can be used in computer systems for managing business processes and administrative regulations.

The second approach proposes to develop criteria, the application of which at the execution stage will allow determining the “dangerous” instances of business processes. Then BPMS will be able to automatically stop the execution of these instances and thus prevent the system from stopping from an unacceptable load.

The third approach proposes to set restrictions on possible combinations of elements in the business process diagram. In addition, it is possible to change the behaviours of elements so that when these restrictions are met, the situation with an infinitely increasing number of control points cannot occur.

To apply the second approach, the following procedure can be proposed as an example.

At the design stage, for each definition of a business process, the maximum possible number of management points in the instance of the business process is set. If during the execution of the instance this value is exceeded, then BPMS will automatically stop the execution of this instance and give a signal to the system administrator about the occurrence of an emergency.

The second approach has two drawbacks.

The first drawback is that at the stage of designing a business process, it is not always possible to evaluate the maximum number of management points in any instance. Such a situation may arise that the instance of the business process will be “incorrectly" stopped by the system, which, in turn, can cause damage to the enterprise operating the BPMS.

The second drawback is that even if the system “correctly” stopped the instance of the business process, the situation after that can be very difficult. According to the tasks of this instance of the business process, the employees of the enterprise performed certain actions. Perhaps these actions require the execution of some other actions at strictly defined time intervals, and the absence of these actions can lead to losses and other troubles at the enterprise.

It is advisable to consider the third approach on three implementation options and for each show the limitations of its application.

Consider the first version of the third approach. It is necessary to introduce additional restrictions for its implementation:

1. In the scheme of the business process at the design stage, one-to-one correspondence of the elements “Separation” and “Merge” should be established, that is, these elements should form pairs.

2. It is necessary that the control points generated by the "Separation" can come only in one "Merge", in the one that forms a pair with it. If the control point has come to "Separation", it is not destroyed, but "waits" until the control points generated by the "Separation" come to their "Merge". After that, the generated control points are destroyed, and the "waiting" control point is launched at the transition leaving the "Merge".

3. It is possible that a point that emerges from a "Separation" may come to another "Separation", etc. Such a management point that has come to "Separation" is called the parent in relation to management points that have come out of "Separation". And the released management points, respectively, are called subsidiary to the newcomer. It is necessary to prohibit the child points in relation to the "Separation", as well as the child points of its child points to come into the same "Separation".

It is possible to build a tree of child points relative to the first management point at each point in time for a business process instance. The nodes of the tree will correspond to the "Separation" through which the control points passed. In accordance with restriction 3, tree nodes cannot be repeated in any of its branches. Therefore, the number of “Separation” in the business process is finite. The number of transitions coming out of each "Separation" is also finite. Therefore, the number of management points in a business process instance will be limited to a fixed amount. Thus, the situation of an infinitely increasing number of control points under these restrictions will be impossible.

The compliance with restrictions 1-3 for any instance of a business process can be verified at the design stage of a business process. It is necessary to build a tree of elements of the business process, which can be reached by child management points of the corresponding levels of nesting.

If in this tree in some of its branches the control point does not pass through its “Merge” node or ends up in the parent “Separation”, then the criterion will not be fulfilled. If there are no such branches in the constructed tree, then the criterion will be fulfilled. Therefore, for any instance of this business process, a situation of an infinite increase in management points cannot arise.

Consider the second version of the third approach. The restriction 1 of the first approach needs to be relaxed. Instead of one-to-one, it is necessary that in the business process, each element "Separation" should be associated with a single element "Merge". Restrictions 2 and 3 remain the same.

Figure 13 shows a graphical representation of example of a scheme that satisfies these restrictions 2 and 3 and does not satisfy the restriction 1 of the first version.

It is not difficult to generalize to this case all the arguments of the first version. Obviously, for any instance of this business process, a situation of an endless increase in management points in the implementation of second version cannot arise.

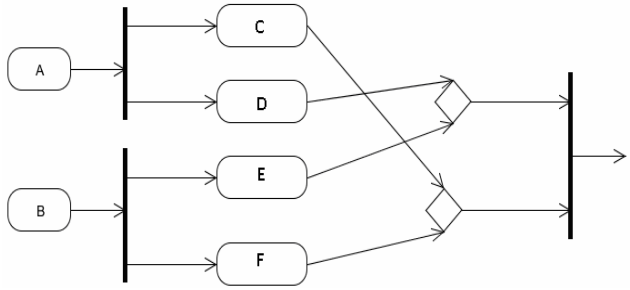

Fig.13. Graphical representation of business processes scheme that satisfies these restrictions 2 and 3 and does not satisfy the restriction 1 of the first version

III. RESULT

The proposed technology based on the process approach helps to formalize the business process of any complexity.

Figure 14 shows a result of applying recent innovative technology for modeling of business process.

Figure 15 shows how the node “Merge” prevents the distribution of conference materials prior to the conclusion of a lease for the premises in which the conference will be held.

This example corresponds to a real business situation. However, a conflict may arise that, if the options for the third approach are implemented, the management points will not be able to get out of the nodes “Merge” and the instances of this business process will never end.

That is, the proposed solutions impose too strong restrictions on business processes and need to be improved.

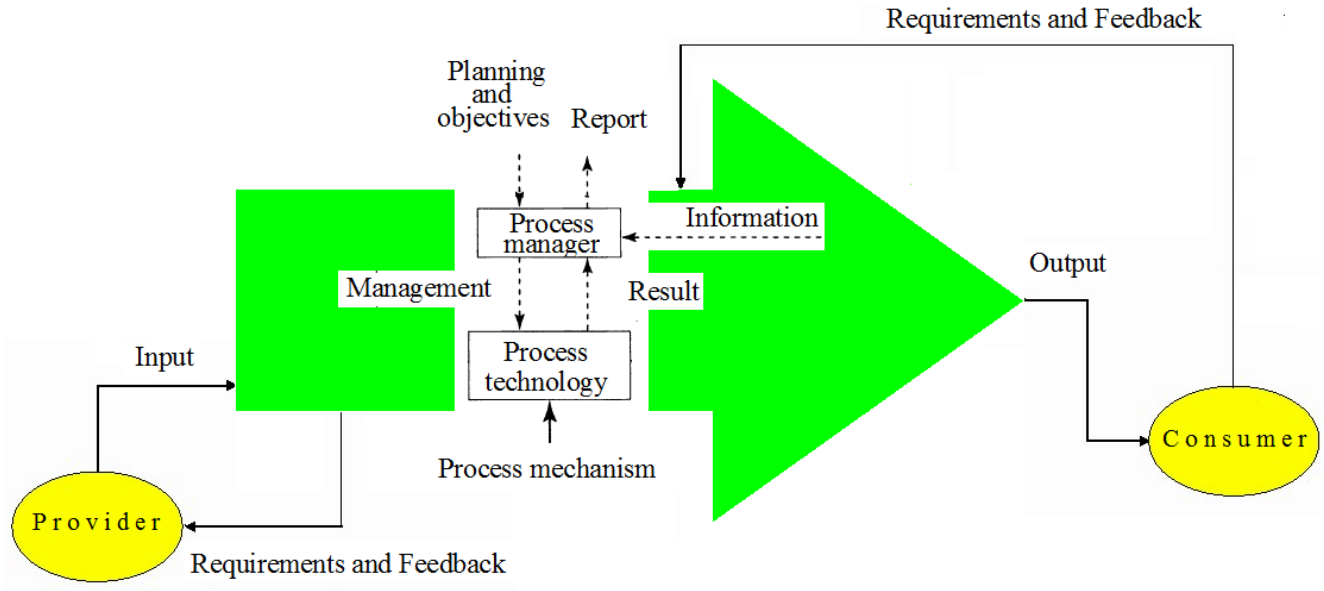

Fig.14.The proposed technology for modeling of business processes

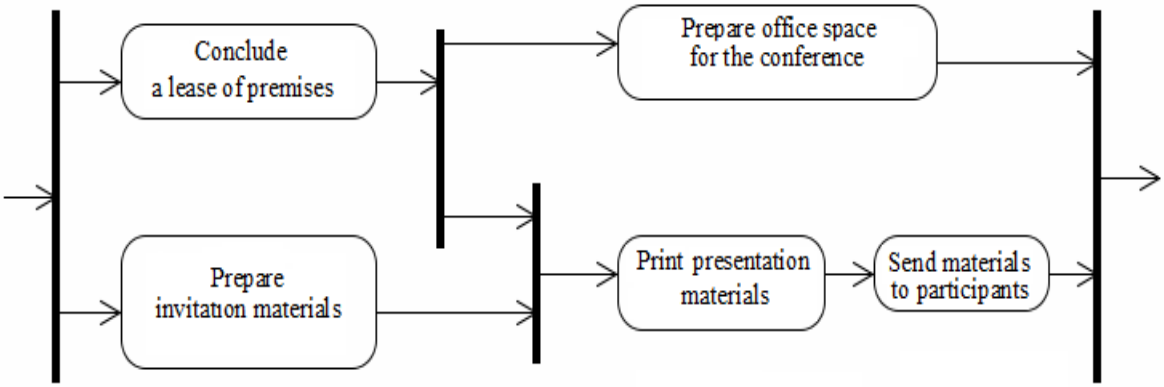

Fig.15. Graphical representation of business processes of organizing the conference

IV. CONCLUSION

This study proposed the recent innovative technology for modeling business processes. This approach allows excluding routine operations from the actions of employees, increasing the speed of employee interaction, effectively optimizing existing business processes, and quickly rebuilding the enterprise's business processes in response to significant changes in business conditions. The result of applying the developed technology is an improved model business process of the enterprise.

This study is recommended to be applied when implementing information technologies and automation of enterprises on the basis of executable business processes. There are questions that traditional theory of process approach does not answer. This article provides examples of such problems and suggests ways to solve them.

In the context of the transition of the enterprise from a functional and matrix-divisional management system to a process-oriented approach to managing economic activity, the need for fundamental changes in work undoubtedly increases and is the key to effective management in the conditions of transformational changes in the economic and organizational system of the enterprise.

The use of such an innovative technology for solving scientific and practical problems of enterprise management significantly expands and deepens the possibilities of economic analysis in the process of solving problem situations and makes management decisions more reasonable and effective.

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