MODELING AND PROCESS APPROACH TO PERSONNEL MANAGEMENT

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ABSTRACT

The article substantiates relevance of implementation of process approach to personnel management at JSC Russian Railways, the role of operational processes to improve efficiency of transport operations. As an embodiment of methodology authors demonstrate initiated pilot project at Moscow railway. It is based on modeling of personnel management processes at the level of regional corporate center, development of regulations, standards, process management algorithms. Testing of the model promises a positive result.

Keywords: railway, personnel management, process approach, operational processes, process architecture, algorithm, regulation, standard.

Background. *Functional management is still a dominant management system of Russian enterprises. However, it has been long recognized that it generates a lot of difficulties [1, 2, 7, 10]. Functional structures often have a rather narrow view and little interest in what does not concern them directly. In addition, the fact remains that destructive competition between functional structures is encouraged with more energy than the fight against external competitors. Perhaps the classic example of this is an age-old conflict between employees of departments of marketing and sales, on the one hand, and production department – on the other.*

The underlying basis for management today is a process approach, which requires a system of business processes carried out by the organization, and further work with them.

Dr. A. Scheer, founder of ARIS methodology, notes: «There is a close relationship between hierarchical structure of the organization and structure of processes. Generally speaking, the business process for the company is a continuous series of tasks which solution is carried out with the aim of creating outputs (results). The starting point and the final product of the business process is the output, the demand for which is encouraged by corporate or external «consumers». [8] That is a process approach allows to focus the entire organization on achievement of the result that has a value to the customer. This circumstance makes a process management model the most relevant.

According to ARIS methodology adopted at JSC Russian Railways, the architecture of business processes is built from top downward. Considering that so far developed in the holding only the top-level processes of the operational level, at which, in fact, occurs an increase in efficiency through management and improvement of technological process, its turn comes not soon. In expert circles there is in this sense a strong opinion that efficiency of process approach to management activities of the organization becomes apparent at the operational level, in connection with which some authors consider it fundamental in business modeling [1, 4, 6, 8].

Transition to the process method is conditioned with rejection of management of individual units for management of through flows of activities, which are implemented in order to achieve the organization's objectives. Process approach has won the world's leading position – 90% of the 500 most successful companies have implemented it even by 2001, the remaining 10% went to process management in 2006 [2].

Objective. *The objective of the authors is to consider modeling and application of the approach to personnel management.*

Methods. *The authors use general scientific methods, comparative analysis, graph construction, modeling, statistics.*

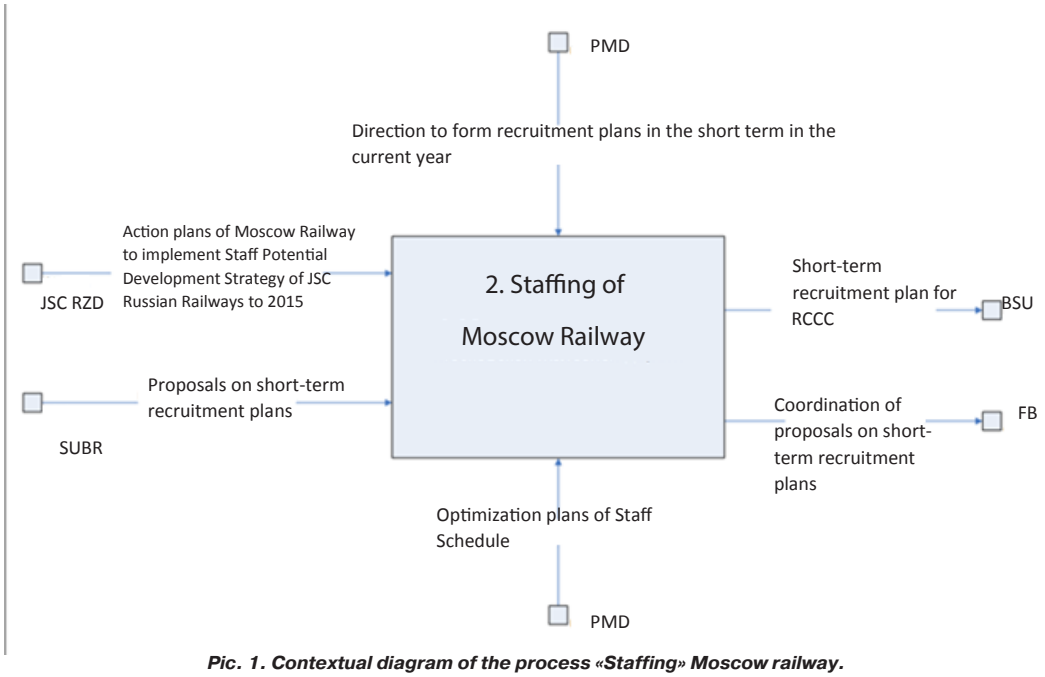
Results. *In 2015, the authors initiated and implemented a pilot project on personnel management processes modeling at the level of regional corporate control center (hereinafter – RCCC) of Moscow railway – branch of JSC Russian Railways. The aim of the project was to study steps and procedures for modeling, specification and regulation of operating processes in the system of work with personnel.*

It should be noted that personnel management department of JSC Russian Railways (hereinafter – PMD) has systematically engaged in introduction of the process approach in its field. In November 2014 the target model was developed by the department, which includes nine key business processes:

- *strategy management;*
- *staffing;*
- *training and development of personnel;*
- *social benefits and management of rewardings;*
- *internal communications;*
- *personnel assessment;*
- *personnel administration;*
- *labor organization;*
- *organization of payment systems and material incentives.*

According to the model functional interaction diagrams and regulations were formed. These documents are mainly aimed at managing through processes in the holding structure, they do not regulate operational processes and can be regarded as a necessary but insufficient step of implementation of the process approach to personnel management.

Let's consider, for example, modeling of operational personnel management processes of RCCC on the process 2.2.2. «Formation of recruitment plan in the short term (1 year)», which is a subprocess of the third level of process 2 «Staffing».



Pic. 1. Contextual diagram of the process «Staffing» Moscow railway.

From functional interaction diagrams it follows that RCCC carries out in this case, the following processes of the fourth level:

1. Monitoring of staffing and staff turnover.

2. Analysis of sources of personnel completion.

3. Proposal for selection of personnel in the short term.

4. Approval of proposals from SUBR (structural unit of a branch in the region) on short-term recruitment plans.

5. Formation of recruitment plan directly via RCCC forces.

From the list of processes, it can be concluded that RCCC performs a dual role:

a) RCCC is involved in the recruitment of linear enterprises of a landfill only at the level of monitoring and coordination of SUBR proposals.

b) RCCC carries out all the management cycle on its own structures.

The basic structural units (hereinafter – BSU), for which recruitment plans are formed at the center are:

– administrative staff of Moscow Railway;

– Moscow Directorate for maintenance of buildings and structures;

– Moscow Directorate of social sphere;

– Moscow Directorate of emergency-rescue means.

Implementation of process 2.2.2. «Formation of recruitment plan in the short term (1 year)» at Moscow railway, as well as other processes of the same kind of processes is performed by personnel management service. It provides for all positions occupational calendars in two sections: calendar processes and through processes.

Occupational calendar is a transitional regulation. The main document regulating expected actions in accordance with ISO- 9000, is a standard of activity.

At the core of the standard is an algorithm of the process, to create which are used the most popular and comfortable modeling notations: IDEF0, Procedure (Cross Functional Flowchart), BPMN2.0, Process (Basic Flowchart), EPC (Event Driven Process Chain). IDEF0. Procedure and Processes belong to a group of notations SADT[1], they have a common modeling apparatus. We use this group of notations in development of standards, because it allows to build an hierarchy of RCCC processes in a single software field, laying out the processes on the principle of «matryoshka».

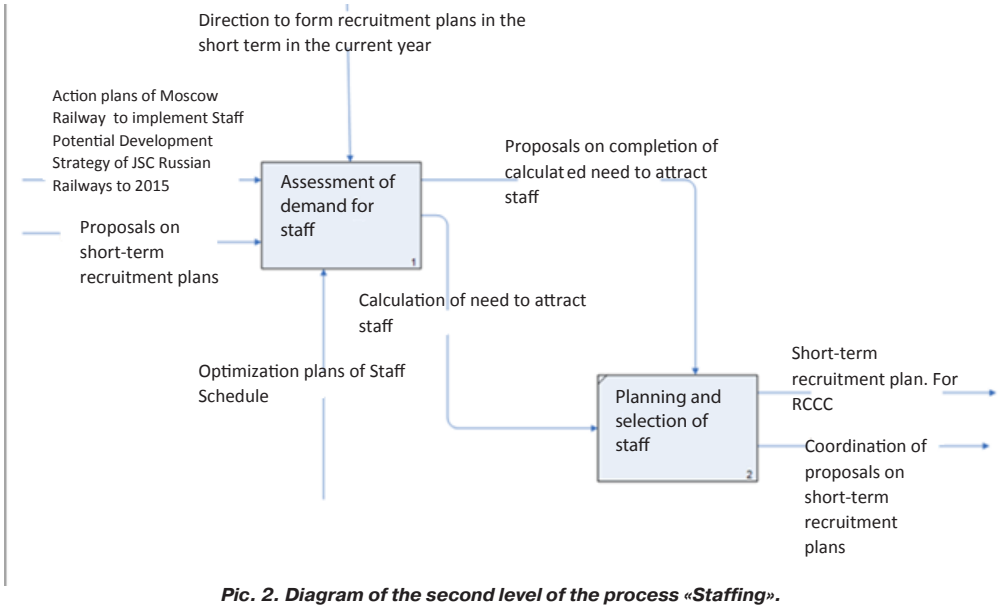
IDEF0 notation is taken to build an hierarchical model of top-level business processes and notations Procedure, BPMN2.0, Process and EPC – for modeling of processes of lower (operational) level.

To construct a process Process owners, Process performers, requirements for period of performance, supporting documents and a number of other positions are determined. The combination of illustrative graphical notations and parameters, provides full description of business processes and allows to issue qualitative regulatory documentation.

According to the methodology of SADT, business process model is created based on the principle of decomposition: it «is initial division of the object into smaller parts and their combination in a more detailed description of the object». At the top level of the model the system under consideration is represented as a single process, in our case it is «Staffing».

Each of the business processes of upper layer is decomposed into a number of lower level

[1] SADT (acronym from the English Structured Analysis and Design Technique) – methodology of structural analysis and design, integrating modeling process, project configuration management, the use of additional linguistic resources and project management with its graphic language.



Pic. 2. Diagram of the second level of the process «Staffing».

processes. As a criterion for their selection is used the intermediate state of control object.

The number of decomposition levels is selected based on the challenges and the necessary degree of detailed description. In practice, 3–5 decomposition levels are used.

Modeling of activity at lower levels of the model is closely correlated with applied methods and technology of activity, that is, in some cases, the questions of «what to do» and «how to do» become one. As a result, with the model process worksheets can be formed.

The diagram is the main working element when creating a model.

IDEF0 is a graphical modeling notation that is used to create a functional model that displays the structure and functions of the system and flows of information and material objects that connect these functions. This is one of the most popular notations of business process modeling. Its features include:

– use of contextual diagrams;
– decomposition support;
– dominance;
– selection of four types of arrows.

Contextual diagram is the upper diagram in which the modeling object is represented by a single unit with boundary arrows. This diagram is called A-0. The arrows on it display relationship between modeling object and environment. The diagram sets the area of modeling and its borders.

Pic. 1 shows contextual diagram of the process «Staffing» for Moscow Railway, made in accordance with the functional diagram of JSC Russian Railways, on the basis of which are defined inputs, outputs, control and process mechanisms.

In the diagram the process «Staffing» is denoted with a number «2», which corresponds to the number of the process in the target model of personnel management processes of JSC Russian Railways.

Process control (arrow above) begins with a telegram of the department: «Direction to form recruitment plans in the short term in the current year»

As the mechanisms in the process (arrow below) are used documents received from the department: optimization plans of staff number for the year and approved staff schedules.

Input of the process is:

– Action plans of Moscow Railway to implement Staff Potential Development Strategy of JSC Russian Railways to 2015;

– Proposals of SUBR on short-term recruitment plans.

Output of the process is:

– Short-term recruitment plan for RCCC, i.e. administrative staff of Moscow Railway, as well as three directorates: for maintenance of buildings and structures; social sphere; emergency-rescue means;

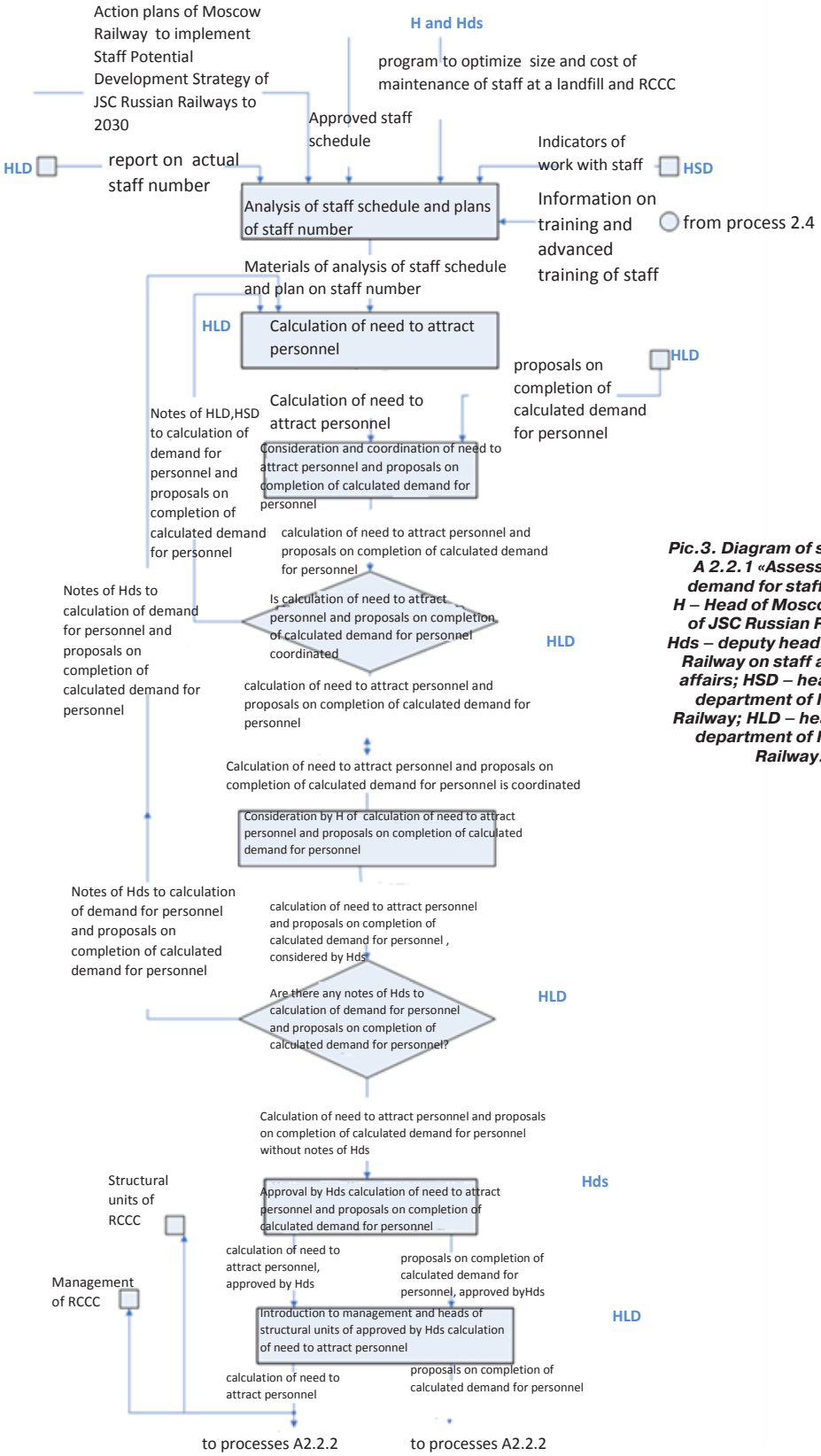
– Coordination of proposals on short-term recruitment plans received by functional branch (FB).

Notation Process (Basic Flowchart in Microsoft Visio) is used to represent a process algorithm that allows to specify a cause-effect relationship and temporal sequence of actions. It also supports decomposition on processes of the lower level. Notation Process is used for modeling of individual processes of the company, as well as at the lower level of business process models created in notation IDEF0.

Pic. 2 shows a diagram of the second level of the process «Staffing», produced by decomposition of the process shown in the contextual diagram.

The diagram in Pic. 2 keeps arrows denoting input, output, control and mechanisms of the parent diagram. However, in this case, subjects are not listed, with which relationship in these areas occurs, because modeling was transferred to the inner level of the process.

In coordination with specialists from personnel management service of Moscow Railway process



Pic.3. Diagram of subprocess A 2.2.1 «Assessment of demand for staff», where H – Head of Moscow Railway of JSC Russian Railways; Hds – deputy head of Moscow Railway on staff and social affairs; HSD – head of staff department of Moscow Railway; HLD – head of labor department of Moscow Railway.

«Staffing» it was decomposed into two processes of the second level:

1. Assessment of demand for staff.

2. Planning and selection of staff.

These processes correspond to the actual work being implemented in the direction «Staffing».

All inputs, control and mechanisms are associated with the first process «Assessment of demand for staff», and outputs – with the second process «Planning and selection of staff».

From the process «Assessment of demand for staff» are transmitted calculations of need to attract staff and proposals on completion of calculated staff number for the process of «Planning and selection of staff». In fact, they are outputs of the process «Assessment of demand for staff» and inputs of the process «Planning and selection of staff».

At the next level of decomposition processes are considered separately, each of the selected processes in the notation Process. Here, based on diagrams of processes are formed standards of activity.

To develop a standard for the process of the third level «Assessment of demand for staff « the following blocks of information program were introduced:

1. Scope of the standard.

2. Purpose.

3. Definitions and symbols.

4. Main parameters of the third level process (subprocess):

4.1. Requirements for a performance period.

4.2. Process owner.

4.3. Process performers.

4.4. Participants in process performance.

4.5. Documentation of subprocess.

4.6. Process inputs.

4.7. Process outputs.

5. Description of actions of subprocess.

6. Forms used in the subprocess.

7. Abbreviations.

8. Diagram of a subprocess, performed in Visio.

The standard is intended for use by personnel management service and other employees involved in the performance of a process «A 2.2.1 process. Assessment of demand for staff».

The standard in tabular form contains inputs, outputs, and actions of processes, the composition of which was developed with the help of personnel management service specialists of Moscow Railway.

The format of the article does not allow to introduce a standard in its entirety. Pic. 3 is a diagram of subprocess A 2.2.1 «Assessment of demand for staff», which is part of the standard and on which a process algorithm is shown.

Conclusions.

1. To solve the main task – introduction of process approach in the holding – processes are described, roles and responsibilities of the participants are documented, principles of cooperation at the operational level are defined.

2. To enhance performance of personnel management service of Moscow Railway liability limits were justified, inputs and outputs of the considered process were formalized, technologies of operational level were shown.

3. The stages and modeling procedures, content and regulation of operational processes of personnel management were tested, thereby accelerating transition to the principles of process management in the structural units of the holding.

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