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EVALUATION OF EMPLOYEE CREATIVITY IN THE CONTEXT OF A PRODUCTION ACCOUNTING SYSTEM

OCENA KREATYWNOŚCI PRACOWNIKÓW PRODUKCYJNYCH W ASPEKCIE SYSTEMU ROZLICZANIA PRODUKCJI

Abstract

The main goal of the modern enterprise in employee evaluation should be creativity. This article provides guidance on the criteria of creativity, which is part of the production accounting system. The paper shows the concept of measuring the creativity of employees of higher and lower levels. Also proposed a tool for measuring creativity of employees.

Keywords: *evaluation, creativity, innovation, production workers, notification management system*

Streszczenie

W nowoczesnym przedsiębiorstwie głównym założeniem w ocenie pracowniczej powinno być kryterium kreatywności. W artykule przedstawiono wytyczne odnośnie kryterium kreatywności, będącego jednym z wielu kryteriów systemu rozliczania produkcji. Przedstawiono koncepcję pomiaru kreatywności pracowników wyższego oraz niższego szczebla. Zaproponowano również narzędzie wspomagające ocenę pracowników w świetle kryterium kreatywności.

Słowa kluczowe: *ocena, kreatywność, innowacyjność, pracownicy produkcyjni, system zarządzania zgłoszeniami*

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1. Introduction

Creativity becomes essential attribute of a company. Characterized by original look at problem and new opportunities for change. Appeared issues in management and production often require innovative solutions. Finding them requires creative approach to the problem [8].

Creating innovative attitudes in a enterprise it's important to support development of creativity among employees and appropriate selection of managers. Creative managers have positive relation to creative efforts of their co-workers [1]. The creative manager responds to problems and refers successful especially in taking on new challenges. These in turn require innovative and unconventional solutions. The Creative manager, is able to inspire others [8].

In evaluating employees, except criteria measurable, are also important immeasurable [4]. This group includes the criterion of creativity. It is one of many criteria for a production evaluating [5].

2. Creativity and innovation

Concepts of creativity and innovation are closely linked. In the literature there are many definitions of these concepts. Word a "Innovation" understood as the ability to stimulate innovation (organizational and technical) is the next step and a result of a creative process [3].

Before appeared the innovations in a company, is a number of important stages in which creativity plays a decisive role. It combines the two stages of the creative process: the step to generate ideas and their implementation. Generated solutions are designed to implement the innovation. This means that creativity contributes to their formation. [1].

Creativity is ability to create and a inventiveness [9]. Creativity characterized by a production new and valuable ideas. Creativity also connects cognitive process and individual characteristics of the person. In view of a goal, creativity is divided to [1]:
– "conceptual creativity" – essential during the development of new methods, products, concepts,
– "operational creativity" – essential when choosing and implementing a results "conceptual creativity" into a practice.

These two concepts of creativity are a combination of "soft" and "hard" elements of the process model of creativity.

The combination of creativity and innovation is an important feature of the transfer of the enterprise, from creativity to innovation. The first stage of this cycle it's creativity, which has the huge importance. In this step, the process is initiated in response to the need for innovative changes. They are born in the creative minds and imagination. With imagination are formed ideas. Through the creativity conceptual and organizational appears a new concepts organizational improvements or technical. They form a group of ideas. Then they are checked whether they can be used. The last step is the implementation process of innovation.

Figure 1 presents a simple model of the transfer from creativity to innovation. It's a form of geometric figures. They create a space where creativity and innovation are in one cycle time. Occur in these various a phenomenon. Their goal is to transition from a creative activity to innovation in the enterprise [1].
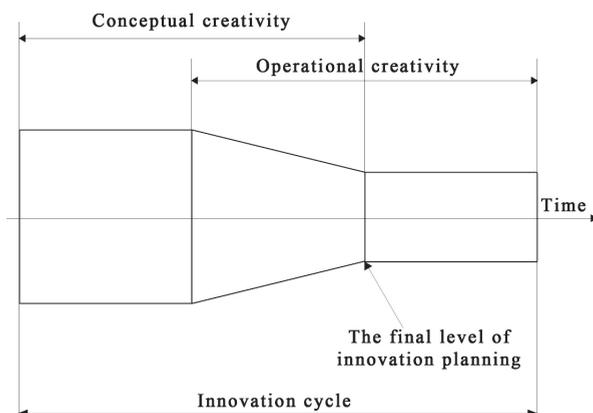
Fig. 1. Model from creativity to innovation in the enterprise [1]

3. The process of evaluating employee creativity

Creative thinking involves the exploration of new ideas and the use of the accumulated knowledge and experience [11]. Employee creativity consists of three components [7] (Fig. 2):
1. Knowledge – knowledge of procedures, technical knowledge, intellectual qualifications.
2. The ability of creative thinking – approach to the problem, the ability to solve them.
3. Motivation – a kind of motivator that stimulates the employee to act. Motivation may be from outside (bonuses, promotions) and from inside (driven by an internal passion or interest).
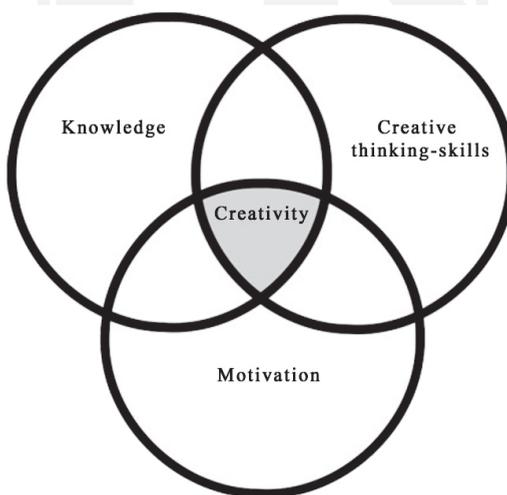

Fig. 2. Components of creativity [7]

An important feature of creative thinking is easy to see stuff that is invisible to others. Creative employee sees the problem and notify on the innovative enterprise improvements or his workplace. That's micro solution [8].

The first step in the evaluate process (Fig. 3) is to determine the characteristics of a creative worker. In this step, you should collect a team of experts who will designate the requirements to be fulfill by a creative worker. The next step is gather and selection data about of employees from the viewpoint of creativity. In this step specify the method and tool for collecting and selecting data. Next is evaluation of the data. In this step, you should select the method and tool to assess creative solutions employees. There are many methods of rating. Stands out the method of absolute, consisting in comparing the results achieved by the employee with pre-established standards (e.g., rating scale, descriptive assessment) and the relative method, involving a comparison of workers among themselves (e.g., ranking, comparing pairs). For the instruments used during the evaluation of employees include: checklists and assessment sheets [6]. The next step in the evaluation process is to analyze the results and provide their presentation to employees. At this stage, you can use two-way closed model, which is based on a dialogue between the person conducting the assessment and evaluation person. Both sides wonder together for to learn about what is best to take steps to achieve their goal [12]. Next the results of the evaluation are transformed to the type of reward that employee.
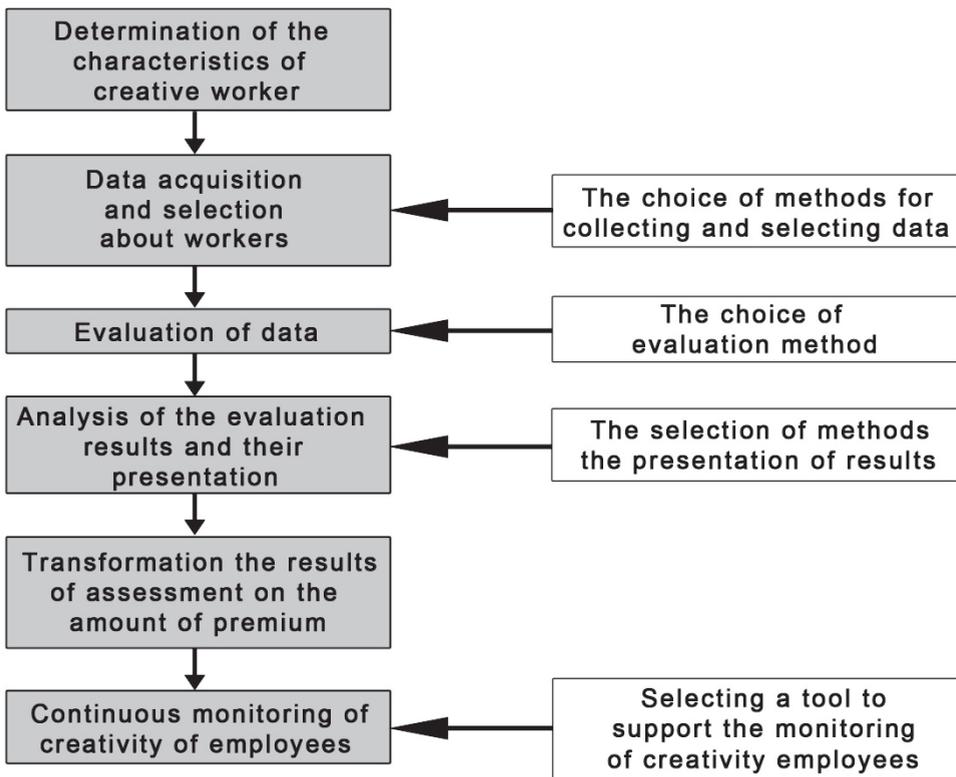

Fig. 3. The process of evaluating employee creativity

Gets this could be, for example, an additional premium to the base salary. The evaluation process of employees should be repeated in a certain period of time to monitor their creativity and motivate for her development.

4. The conception of evaluate workers in the criterion of creativity for a practical example

Supporting tool for monitoring and evaluation of creativity of production workers was developed on the example of enterprise specializing in the manufacture and distribution of gutter systems.

Evaluation of employee, with respect to the criterion of creativity will be fair if will be reduced a subjective nature of this criterion. The measurement of creativity is not an easy task. Due to the fact that creativity has its own unique perspective on the problem and on the new possibilities of changes in the enterprise, it was proposed a systematic approach to this issue.

The basis of the developed system will be a relational database, created in MySQL. It is the world's most popular database application. It is available under open source license, anyone can install it and use it without paying any costs. MySQL is "neutral technology" can be used in any technology. The software package includes: MySQL database server, applications and a number of utilities [2].

In the studied company the employee evaluation is carried out according to the following criteria: absenteeism, punctuality, productivity and creativity. Outcome of the assessment effects the amount of the premium that receives an employee. The enterprise does not have a tool that will monitor creativity of the employee. In the enterprise is assumed that the creativity employee:
– improving his working place,
– inform the employer about the emerging the problems and proposing their solution,
– wants continually improve themselves.

5. Tool for supporting the evaluation of employees under the criterion of creativity

In order to facilitate monitoring of employee creativity, was proposed the notifications management system called "Electronic box of the problems / solutions".

The electronic box has a three groups of users: administrators, senior staff (line managers) and lower-level employees (production workers). Each group will have a different level of access to information.

The first group of users with the highest privileges are administrators. Their task will be, among other things: adding new information and correcting errors. This group also includes immediate supervisor, who will have access to management at all levels. His tasks include inter alia, evaluate the creativity of line managers.

The second group of users, with limited access, is the senior staff. The main function of this group will be introducing applications of production workers and their evaluation.

Line managers will have permissions to management and evaluation of staff only from their department. Rest of the results will be available only for inspection. These solutions will be introduced by the senior staff. At any time, they will have the opportunity to submit their innovative ideas, without access to their evaluation.

The last group, with the lowest privileges are lower-level employees. Members of this group will have only access to information. They will not have the permissions to edit them or delete them.

Content manage system of employees will be built with the graphical template and parts of the workspace. The system will be designed so that access to the information they had only users who have an account with the appropriate permissions. After passage to a website will appear the login panel (Fig. 4). If the person is not a user of the system, will show the message about incorrect username and password. Each user, after passing through the login process will be transferred to the appropriate panel.
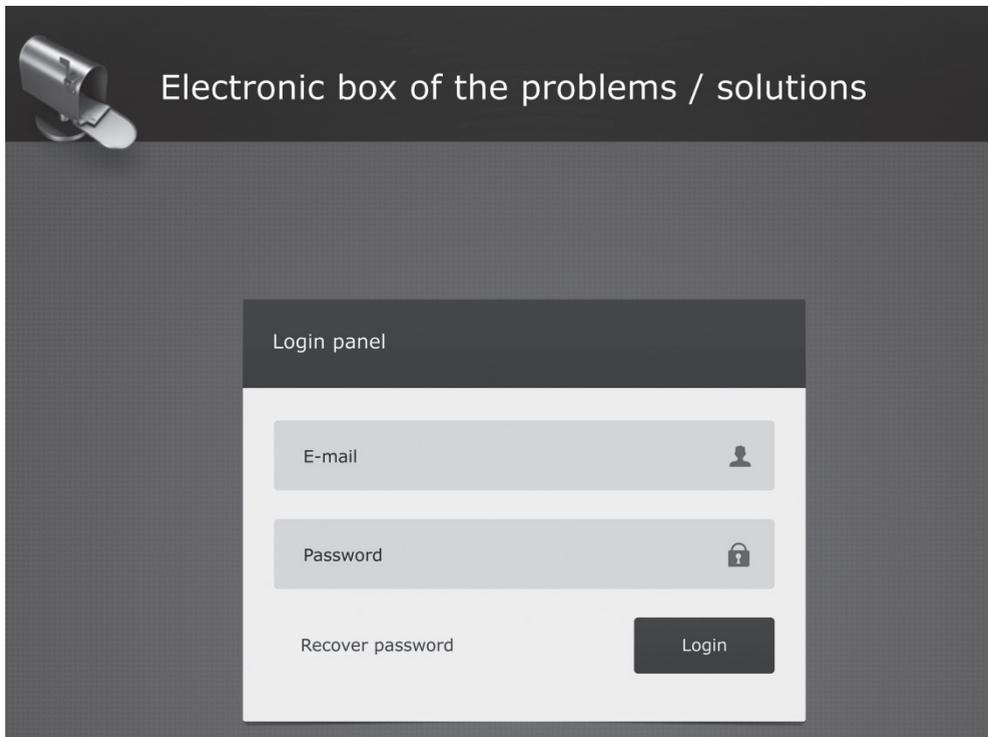

Fig. 4. Graphic design of the login panel

For example, in the panel menu of higher-level employees, can be manage (Fig. 5):
– Notifications – adding, viewing notifications;
– employees – adding, deleting, evaluation of employees, monitoring their creativity;
– statement of results – the ranking of employees, the number of applications in a given time interval, the number of applications / department.

Fig. 5. The graphic design of workers high-level panel – notification management

The panel will also have the option to search an employee or department and the problems. In the preview of applications will be listed information such, as (Fig. 5):

– name and surname employee's the declarant a problem / solution. When you click in the employees will be displayed full information about it (for example, a department name, where you work, work job name, date of commencement of work);
– action – type a application (the problem or the solution problem);
– time the notification about problem / solution;
– title of the report (by clicking on the title of the notification will displayed his full description);
– name and surname a person who save a notifications;
– evaluation a notification (for example, whether the solution will be realized, or will be rejected);
– the number of points obtained for reporting.

In the "view employees" will be listed information such as (Fig. 6):
– name and surname employee who the notification problem / solutions,
– the number of accepted problems to solve,
– number of rejected problems,
– number of implemented solutions,
– the number of rejected solutions,
– sum of points awarded for all notifications in a given time interval.

User will be able to choose the time interval in which the results will be shown for the selected employee.

Final evaluation of the employee in the criterion of creativity, will be the sum of points obtained during the evaluation of all notifications. In case when the reported problem or the solution is rejected, workers receive 0 points. If the reported problem will be considered the worker received 1 point. For reporting the solution to the problem, which will be enforced, workers will receive 20 points (Tab. 1). It is important to reward employees for creative solutions. Only reporting the issue is not as important as the notification solution that will be
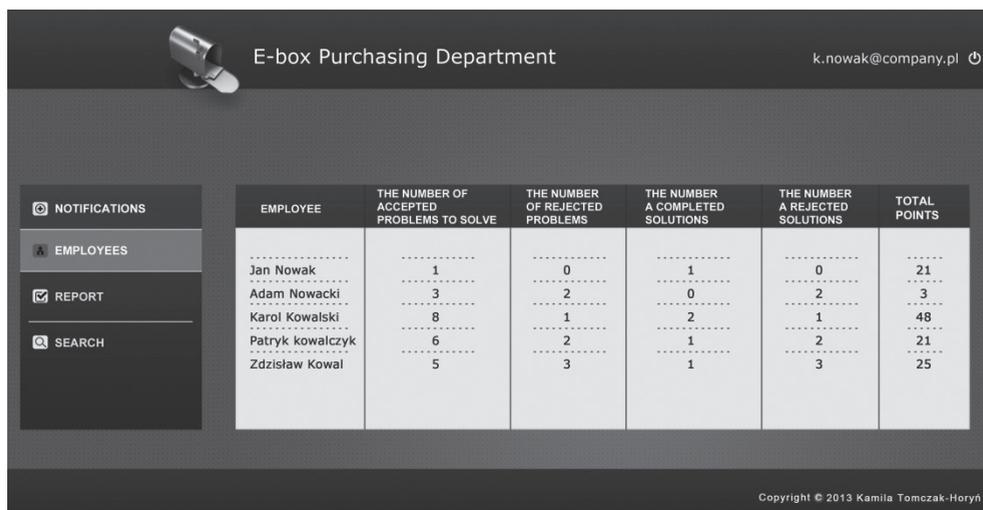
Fig. 6. The graphic design of workers high-level panel – workers management

executed. For example, when the employee received one point he can get the bonus. Total score which an employee obtain for a period of time, will be influenced to the amount of the money premium.

T a b l e 1

Scoring for the activity type

Action	evaluation a notification	Points
Reporting an issue	rejected	0
Reporting an issue	accepted for the solving	1
Application to solve the problem	rejected	0
application to solve the problem	adopted for the solving	20

The proposed system will facilitate the evaluation of employees to monitor and collect information on their creativity.

6. Conclusions

Important thing in the system of a production accounting measurement is element of creativity. When reviewing the literature on this issue, it was concluded that creativity is characterized by perceiving what is invisible to others. An employee who is creative is capable of perceiving problems and to propose innovative improvements. They may involve the whole company or position to work. This approach to creativity allows you to establish

guidelines for its measurement. The proposed tool allows monitoring and evaluation of junior staff and senior management with respect to the criterion of creativity. The online staff appraisal system based on MySQL technology enables anywhere, anytime access to information about the creativity of the employee.

If you want to motivate the employees to application of electronic box you can create additional bonus system. Workers would be rewarded for the problems or their solutions.

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