

9th IQC

**QUALITY
RESEARCH**

ISBN 978 - 86 - 6335 - 015 - 1

9th International Quality Conference

05.06.2015. Center for Quality, Faculty of Engineering, University of Kragujevac



Culture of Quality

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05.06.2015., Kragujevac, Serbia



9. International Quality Conference



CONFERENCE MANUAL

June 05th - 2015, Kragujevac
Faculty of Engineering, University of Kragujevac

9. International Quality Conference Conference manual

ISBN: 978 - 86 - 6335 - 015 - 1

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Publisher: **FACULTY OF ENGINEERING**
34000 KRAGUJEVAC
Sestre Janjić 6

CENTER FOR QUALITY
34000 KRAGUJEVAC
Sestre Janjić 6

For publishers: *PhD Miroslav Živković*, full professor
PhD Slavko Arsovski, full professor

No. of copies: 200

Printing: Faculty of Engineering, Kragujevac

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Publication of Conference manual and organization of
9. International Quality Conference is supported by:
**Department of Education, Science and Technological Development of Republic of
Serbia**

Izdavanje Zbornika radova, organizovanje i održavanje
9. International Quality Conference podržalo je:
Ministarstvo prosvete, nauke i tehnološkog razvoja Republike Srbije

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THE REVIEW OF TOOLS FOR HUMAN RESOURCES MANAGEMENT IN QUALITY MANAGEMENT SYSTEM

Abstract: *The concept of quality management as one of the key requirements in front of management puts the resource management (item 6 S 9001), with special emphasis on human resources management and its competence. A variety of studies in this area points out to the fact that human resource has a very important role for the organization, and with their quality management, organization strengthens its position in the market. Human resources management signifies a scientific discipline, management function in organizations and practices and interaction with others in the company. For managing, key function is planning with the application of the principle of making decisions based on facts. For this reason it is important in the planning process of human resources to use various of management tools to ensure competent human resource function in ensuring the effective and efficient management of the organization. This paper provides an overview of management tools related to the function of planning of human resources in the organization.*

Keywords: *human resource management, human potential planning, quality management, ISO 9001*

1. INTRODUCTION

People, human potential and staff represent a living factor in the company, which by the use of their knowledge, different skills, abilities and creativity contribute to company's competitiveness and successful goal achievements. Many excel that human potential is an overall knowledge, skills, abilities, creative possibilities and motivation that is accessible to a company. This is overall intellectual and psychical energy that human is ready to engage and invest into development and of course goal achievement. The part of human resource management that can't be omitted is the part of planning the human potentials. This is conscious and organized activity or a process that perceives and later anticipates certain cognition and values. Special accent has been put on the role and the importance of human potential planning, factors that influence on its planning, different processes and planning methods, strategies in case of bigger employee number, and strategies for redundant employees and organizational consequences. It is necessary to hold respectable and appropriate knowledge about

different tools and methods for successful company and human potential governance. This eases resolving specific problems on any management level.

2. THE ROLE AND RELEVANCE OF HUMAN POTENTIAL PLANNING

Planning in organizations is a conscious and organized business activity as well as creative thinking process which can perceive and then anticipate probabilities of phenomena, flow or activity movements with the goal to realize company's strategic goal and mission in the best possible way. [1]. The planning process itself is immanent to mechanical systems, while today business organizations are determined with more and more complicated people role. People have a new role that is very dominant by virtue of information-technology revolution. Human potential planning can be defined as a specific process of translating strategic and business goals into specific future human potential goals. The process of human potential planning must answer questions like how many people it is needed to reach planned

business goals, what employee profile, which skills, knowledge and capabilities must be assured, how to prepare today employees for future needs and business demands, etc. Managers who ignore that aspect of business planning encounter numerous problems. Figure 1 clearly represents the process of human potential planning.

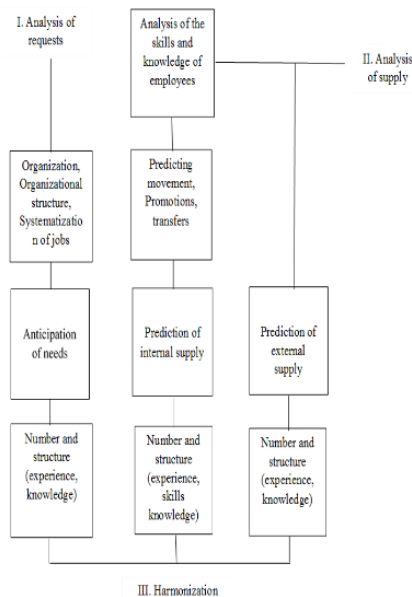


Figure 1 - Human resource planning [2]

3. PLANNING AND HUMAN RESOURCE COMPETITIVENES IN THE FUNCTION OF ACHIEVENG THE COMPANY'S STRATEGY

Human potential planning is a very important function of human potential management and can significantly contribute to successful achievement of company strategic goals. Every organization wants their strategies to become functional. To do so, they need to have a certain number of quality people with different knowledge, skills and other competencies for its realization. Human resources planning is an indirect phase between strategic intent and practical action [3]. From strategy and organizational strategic goals, business plans and actions are derived and every organizational unit and function should undertake those actions.

Long-term planning of human potential is

a component of business strategy and strategic management of human potential. Strategic planning can be defined as determining the overall organizational purpose and the way how it can be achieved. Planning is further step in operationalization and strategy realization. This relation is shown in figure 2.

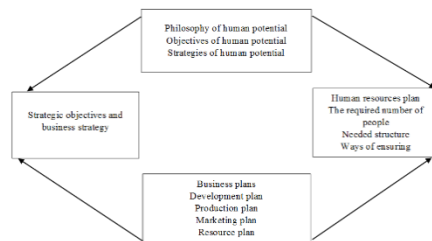


Figure 2 - The relation between strategy and human potential planning [3]

Since human potential planning is a part of planning it follows strategic, tactical and operative plans. The importance of human potential planning arises from the accent of planning the human potential which results in changing the overall approach and understanding the strategic importance of human potential, but also the problems and consequences that companies are faced with when neglecting that important segment of business planning. It can be stated that this area is one of the least practicing function in human potential management. Today many organizations see human potential planning as one integral part of business planning and development. It is also rising the awareness that organizational capabilities can be seen in possessing the sufficient number of quality people with the appropriate talents, skills, motivation and other competencies. In that way organization can respond to shock and external environment challenges. Buntak et al. (2011) defines employee related competencies, that is, individuals, have a set of related knowledge, attitudes, skills and other personal characteristics that affects on a major part of one's job. Competence is related to the work efficiency and it can be measured by using generally accepted standards and improve education, training and development. The main components of competence include: skills, attitudes, behavior, knowledge, personality, skills and experience. Competency is the ability to perform successfully a specific task, activity or function, and incompetence is its opposite.

According to Liu et al. (2014) competency has three key characteristics as follows: (1) Correlate to work. The competency is the individual characteristics associated with the job; (2) distinguish the performance. The competency can make a performance distinction between outstanding staff and

average ones; (3) correlate to performance.

Developing employees competence must be aligned with the strategy of the company used to achieve its overall vision. Figure 3 represents a model of strategic management which clearly shows how a human resource strategy can be defined and implemented.

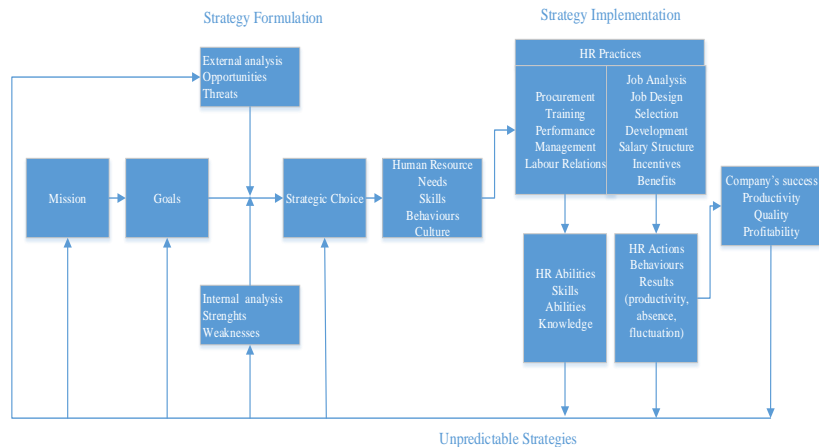


Figure 3 - The Model of Strategic Management Process [4]

According to Noe et al. (2006) strategy formulation consists of five basic components of strategic management process, such as: mission, objectives, SWOT analysis and strategic choice. Human resources development plan must be linked to the strategy of the company. After a strategy has been documented, it is important to apply the same in practice. The part of human resource management process implementation also consists of five basic elements. One is a general overview of management practices that differ from company to company. Many companies develop their business models in order to enhance their business. Models are being developed for the entire organization or for a particular part of the organization. From the perspective of human resource management, competency model includes a list of skills and competencies that an employee must hold in an organization. Given the fact about the speed of information flow and technology development speed, model itself needs to provide information's to management about training needs in case the current competencies does not meet the market needs. Based on the needs evaluation for new competencies, management is taking actions related to competence increase by training organizing and providing support to

employees. In this way, management and the organization becomes efficient and effective.

4. COMPETENCE REQUIERMENTS ACCORDING TO STANDARDS ISO 9000FF

The concept of quality management places resource management as one of the key requirements for management governance (ISO 9001, clause 6) with special emphasis on human resources and its competitiveness. Figure 4 shows a brief overview of 9000ff Standards that are defined by requirements for human resources competence and its management.

The impact on the business of an organization as well as on effective and efficient management of resources, companies have ISO 9001 and 9004 standards, in order to achieve long-term and short-term goals of companies and thus satisfy the expectations of customers, ie all stakeholders. Standard ISO 9001:2008 from the aspect of intellectual and human capital touches this area directly and indirectly through requirements for resource management in clause 6 of Standard and through model of process-based quality

management system, or in clause 7 through the requirements for managing the process of realization of products or services.

| Standard | Clause | Focus on |
|------------|--|--|
| 9001:2008 | 6.2. Human resources | addressing competence gaps through education, training, skills and experience |
| 9004:2009 | 6.3. People in the organization | people who are a significant resource of the organization and management is the key for optimal utilization of human resources |
| | 6.3.2. Competence of people | "people development plan" establishment and associated processes for improving competence of employees |
| | 6.3.3. Involvement and motivation of people | motivation, responsibilities and activities to create value for the customer |
| 10015:2002 | 4.1. Training: A four-stage process | training cycle illustration starting with defining the training needs |
| | 4.2. Defining training needs | defining gaps between the existing and required competence, defining training needs by employees, document training needs |
| | 4.3. Designing and planning training | design and planning of actions for addressing the competence gaps, and definition of the criteria for evaluating the training outcomes and monitoring the training process |
| | 4.4. Providing for the training | supporting both the trainer and the trainee, and monitoring the quality of the training delivered |
| | 4.5. Evaluating training outcomes | assessing if the organizational and training objectives have been met |
| | 5. Monitoring and improving the training process | monitoring involves reviewing the entire training process at each of the four stages |

Figure 4 - The review of requirements for human resource competence according to Standard 9000ff [5]

In the clause 6, which tells about managing resources, resource management is explicitly requested and particularly, the importance of human resources e.g. human capital is recognized, which can be seen in clause 6.2., human resources are discussed.

5. THE REVIEW OF TOOLS ACCORDING TO MANAGEMENT LEVELS

Lack of the right people and skills, and the overload of inadequate people has led into question the development of many companies, and exclusively is the result of a lack of human resources planning as an integral part of business planning and development. Problems in which companies find themselves it costly experience that forces them that they into their strategic and business plans impolanted and plans of human resources. In the following will be shown variety of tools and methods used by top managers in their modern organization. These methods can be stochastic, methods of mathematical analysis, methods of business decisions and preparation of business decisions and a variety of simulation methods and

techniques. The methods are divided into three levels of management, such as operational management, tactical management and strategic human resource management. Each management will specifically be explained and illustrated. Table 1 provides the tools ie. the methods used in various functions and levels of management. These functions include: planning, organizing, leading and controlling. Some tools appear multiple times in different functions, while some tools are specific to only one function.

Table 1. Schematic representation of tools in management

| FUNCTIONS OF MANAGEMENT | TOOLS | LEVELS OF MANAGEMENT |
|-------------------------|---|--|
| PLANNING | Delphi method, Scenario method, Method 635, Brainstorming, Network planning techniques, Monte carlo method, Trend analysis, Methods of stochastic matrix, Mathematical linear programming | OPERATIONAL Delphi method Scenario method Method 635 Morphological analysis Brainstorming |
| ORGANIZING | Method 635, Morphological analysis, Flow chart, Decision tree, Gantt chart | TACTICAL Network planning techniques Flow chart Decision tree Monte carlo method Gantt chart |
| LEADING | Trend analysis | |
| CONTROLLING | Morphological analysis, Trend analysis, Regression analysis, Discriminant analysis, Mathematical linear programming | STRATEGIC Trend analysis Regression Analysis The method of stochastic matrix Discriminant analysis Mathematical linear programming |

5.1. Operational management of human resources

Operational management generally does not create much ambiguities as strategic. They are mostly uniform opinion both in theory and practice with regard to their content and meaning. Most often these are yearly plans, ie.

human resources activities. Operational plans are in the function of operationalization and does not serve with the strategic options, but tactical preparations for the implementation of the planned activities of human resources.

Table 2. Tools at the operational level

| TOOLS AT THE OPERATIONAL LEVEL | |
|---------------------------------------|---|
| Delphi method | It is a method that today is widely applied not only in management but also in the management of human resources. Most often it is used for purposes of business decision-making, but a lot used as a method to predict. It is named after the ancient Greek temple in Delphi where in Greek mythology, the gods gathered to predict and determine the future. This method is based on the systematic collection of data and information, then combining and evaluating individual assessments of various expert in specified field. It is the method of collecting and evaluating all opinions, until reaching certain consensus. |
| Scenario method | It is a method of forecasting the most important trends in the environment that could shape the future of the organization. The essence of this method is to come up with plans for the most likely situation in the future, in order to prepare and create a specific answer. The benefits are numerous, but the most important are the creation of political parties, government agencies and etc.. For managers this method is very relevant for the reason that they know what to expect in the future, therefore, to pay attention to the environment, to monitor the movement of trends and to monitor competition. Also to know how to develop new products, services, to create new ways of working, new approaches to the creation of value and etc. |
| Method 635 | Method 635 is a creative method that is done in groups and is most common in the field of marketing, advertising and design. This method aims to produce 108 new ideas in half an hour. It functions in a way that includes six participants in the group who are under constant supervision of the chairman. Each participant creates three ideas every five minutes. Ideas are recorded on paper and sent to the next participant, and so cycle continues. Participant reads the ideas that serves him as an inspiration for the creation of new ideas. Participants are also encouraged to continue to develop their ideas on the basis of others who thus stimulate the formation of the creative process. After six rounds in thirty minutes, the group has created 108 new ideas. |
| Morphological analysis | It is a method of analyzing the structure and problem solving. It consists of four parts, namely: the definition of problematic – it is determined by the existing problem, the parsing problem on component- wants to analyze in detail each segment, morphological cube- for each parameter is trying to find alternative solutions, selection of the optimal opportunities solutions- goal is to find ideal or optimal solution. |

| | |
|----------------------|--|
| Brainstorming | Brainstorming is a method that wants to find ideas, and it was created by Alex F. Osborn while improvement continued Charles Hutchison Clark. It is a method that encourages the creation of new and unusual ideas with certain groups of people. It is named after the method "using the brain to storm a problem." |
|----------------------|--|

5.2. Tactical Human Resources Management

At the tactical level, strategic objectives are transformed into specific goals of individual organizational units of the company (marketing, manufacturing, financial, etc.). This procedure defines the main activities that each of these functional units should performed in order to achieve its goals.

Table 3. Tools at the tactical level

| TOOLS AT THE TACTICAL LEVEL | |
|------------------------------------|---|
| Network planning techniques | There are several techniques of network planning, and one of them is called PERT method (program evaluation and review technique). It was created in 1950 in the USA, and the company Allen and Hamilton Consulting was using the method then for planning activities in the construction and automotive industries. |
| Flow chart | For the flow chart can be said that this is a symbolic algorithm. It consists of a series of symbols connected by arrows that define the course and direction of the program. The basic elements used in it are: the beginning of the program, input, node, processing, loops or blocks, output and the end of the program. |
| Decision tree | Pictures model that presents the entire structure of decision-making. All situations that can be displayed in the table of decision-making, can be displayed on the decision tree. Also it is an alternative way of displaying and analyzing the situation of decision-making. It should be emphasized that the decision tree technique is suitable for analysis of complex and dynamic decision-making situations, and is particularly useful when there is a possibility that the decision is divided into a number of smaller situation of choice, which in time sequence lean one on other. |
| Monte Carlo method | It is a stochastic simulation method or probabilistic computer algorithms using random numbers and a large number of calculations and predict the behavior of repeating complex mathematical system. |
| Gantt chart | It is the type of bar chart that illustrates a project schedule. This diagram illustrates the starting and ending date of some variable and summary elements of the project. Fixed or terminal elements and summary elements comprise the division of labor structure. |

5.3. Strategic human resources management

Strategic management deals with the survival and development of the company over the long term in accordance with the principles of efficiency and effectiveness. With strategies are defined set of actions and the resources needed for achieving strategic goals. Their purpose is to maximize the benefits that the company has over the competition as well as the opportunities offered to them in the external environment.

| | |
|--|---|
| Mathematical linear programming | This is another method of business predictions based on: [1] - allocation of available resources with the inclusion of alternative, limited opportunities. - alternatives provide a basis for making the best opportunities - optimization involves the maximization or minimization of a linear function. |
|--|---|

Table 4. Tools at the strategic level

| TOOLS AT THE STRATEGIC LEVEL | |
|--|--|
| Trend analysis | Dynamic conditioned mean value and the direction of the tendency of a trend based on the direction and magnitude of current movement. Displays using mathematical direction that has its own formula and method of calculation sizes. On the reliability and quality of trend affects the size of observations. It can be said that if is a longer observation period, the reliability of prediction is higher. |
| Regression analysis | Regression analysis is a process which seeks to examine the impact of changes in one or more independent variables to change one dependent variable [1]. In practice, most often used is multiple regression. |
| The method of stochastic matrix | This is one of the latest management methods in predicting. The essence of this method lies in the time that follows the development of a past event. Predicting the future is to find the stochastic relationship between future conditions and factors that affect these conditions. |
| Discriminant analysis | It is a method that allows the determination of variables that makes the difference between two or more naturally formed groups of entities. The aim of this analysis is to define a small number of new variables, to describe the differences between the groups. These new variables called discriminatory variables. They are obtained as linear combinations of the original variables, with the proviso that those variables in maximum differ groups. |

6. CONCLUSION

In order to achieve continuous improvement in the organization is very important to manage the competence of employees. More and more is demand from people and an increasing emphasis is put on the quality of knowledge, abilities, skills and other competencies. Also, a very important role in all has a human resource planning. Today, human resource planning is one of the most important tasks of modern management. Planning is a specific process of implementing the strategic and business objectives into specific future goals of human potential. From the aspect of quality, reviewing the standard that are included in the part of the competence of human resources it is given guidance on how a company can ensure competence. So standard 10015: 2002 gives specific instructions on how to manage employess competencies and achieve greater quality and efficiency of the firm. The standard provides a key of quality management competencies which consists in determining the existing competences available to the company, necessary competencies and the differences between them, on condition that the whole process of management competencies is documented. This way provides the continuous improvement and provides guidance for implementation in accordance with the defined application in the certification to the ISO 9001 standard.

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