

Evaluation of consumer satisfaction with the quality of training of young professionals by the universities for enterprises of coal-mining complex

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Abstract. The article presents the study results of evaluation of customer satisfaction (a big coal mining company) with the quality of training of young specialists with higher education. Research is based on the model of Kano, one of the most effective tools for assessing the quality of products within the framework of modern management model - Total Quality Management. Based on the results, “quality profile” of training of young specialists with higher education is built and the factors that determine its level and characteristics are identified. The findings show universities the need to include such transformations and changes into the system and the processes of creation and positioning of their “product”. It will give a higher added value to the “product” and, therefore, provide the manufacturer and the consumer with the higher competitive advantage in the current economic conditions.

1 Introduction

The modern world economy is showing an ever-increasing pace of change and innovation. Experience and knowledge of previous generations are depreciating too quickly. Almost no company can believe into its secured future any longer, or ensure the sale of their products. Tom Peters, one of the authors of the research in the field of modern methods of management that is widely known in the west [1], mentioned in his later works: “... The pace of change has become too fast to make at least one company feel safe” [2].

Thus, the continuous change in enterprises’ environment has become one of the fundamental characteristics of a modern economy. According to the well-known theorist in the field of corporate strategy Kenichi Ohmae, “... the only reliable way to ensure competitiveness in an environment with a high degree of uncertainty and variability is to make this variability be a way of life” [3]. In the context of rapid changes and tough competition only highly adaptive systems can remain viable, i.e. systems that can quickly **learn** and **change**. In constructive terms, this means that the business system should possess a degree of flexibility equivalent to a changing environment at all stages of

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production and management levels, which provides it with the ability to feel itself “like a fish in barrel” with regard to this kind of uncertainty. From the point of view of the implementation of this concept in practice, the closest approach is based on the creation of so-called flexible manufacturing systems (agile manufacturing) [4]. The term “flexible manufacturing” characterizes the organizations, which have business systems that include processes, tools (machines) and the staff training to respond quickly to changing customer needs and trends in the market, and at the same time provide the product manufacturing or services without significantly increasing costs or reducing quality.

Many researchers consider flexible production system as a further step in the development of production systems after the lean-production [5] and Toyota production system (TPS) [6].

The implementation of this approach requires the reengineering of traditional production systems. In particular, in the mining industry, as studies have shown [7, 8] the implementation of this approach provides enterprises, which operate in conditions of high uncertainty and volatility parameters of the economic environment, with a significant increase in efficiency.

The conclusion about the necessity of continuous change, predefined high rate of technological progress is the most significant in the situation with a rapid change in social, political and economic conditions. Russian companies are going through such a period, and the problem of rapid changes, adaptation to new environmental conditions for them is relevant as ever.

The foregoing allows us to see the problem of finding effective management principles from a new angle. It is useless to copy the style of behaviour and management of successful companies. The ability to **learn** and **change** is becoming mandatory for organizations seeking to achieve or maintain success. At the same time, it is not just about learning and change. The issue of life is to achieve the necessary pace, the speed of these processes. The main means of survival and the achievement of perfection for organization is **the maximum high speed of its training.**

In the circumstances outlined, skill development plays an important role in ensuring the viability of the business. As a reaction to it, the market of educational services is continuously expanding. In recent years, for example, only in the Kemerovo region 29 educational institutions of higher education were preparing specialists in more than 200 areas and specialties.

In an increasingly competitive environment the client satisfaction with the quality of trained specialists becomes the determining factor in gaining competitive advantage on the market of education for universities. Thus, as it was noted by guru of modern management E. Deming: “... it is absolutely not enough to have a consumer who is just satisfied ... success in business comes from regular customers who are loyal to exactly your product or service and bring you their friends” [9].

2 Methods

The research of the labour market satisfaction with the quality of training of specialists with higher education was carried out based on Professor N. Kano’s model [10]. The method is aimed at identifying the needs and expectations of consumers, their structuring and drafting of “quality profile” of young professionals.

The Kano model considers different types of emotional reaction of consumers to the individual characteristics of the product [11]:

Type 1. “Attractive features” (desired, advancing quality)

Attractive features are a group of parameters of quality which give the consumer unexpected value of the offered products, the existence of which he could only dream of,

not even suggesting the possibility of their implementation. Attractive characteristics (if they are in the product) cause feeling of satisfaction and delight. However, if there are no such characteristics, the users do not experience dissatisfaction. Attractive characteristics are unexpected, they satisfy previously unmet needs. Their presence in the product provides favourable conditions for a breakthrough to the market and further improvement of the product.

Type 2. “Dimensional characteristics” (required quality)

These characteristics cause satisfaction (if there are such) or dissatisfaction (if there are no such). Usually they are measured directly by the consumer, and primarily affect the value of the product according to his point of view. This is a set of quality indicators, which has both technical and functional characteristics of the product.

Type 3. “Required characteristics” (basic, main quality)

According to consumers, these characteristics belong to the group of those qualities that must be in the product, and therefore, expecting them in the product, he does not consider it necessary to talk about them with manufacturer beforehand. Their absence may result in a negative reaction of the consumer. Manufacturer has a risk to lose its image and subsequent business if he does not pay adequate attention to the basic indicators of the quality of the product.

Type 4. “Unimportant characteristics”

Availability of unimportant characteristics causes a mixed reaction of users, but in general, they do not care whether these characteristics of the product exist or not. The return on investment in these characteristics is low.

Type 5. “Undesirable characteristics”

The presence of a part of undesirable characteristics in the product nullifies the positive impact of attractive and desired characteristics.

Understanding the requirements of the consumer by the manufacturer, properly identified before the start of product design and production, ensures the success of this product in the market and reduces the time of its creation.

The OJSC "SUEK-Kuzbass", one of the largest industrial complexes of the Kemerovo region and which brings together mining and processing of coal, acts as a customer during research, which was conducted in the period of 2015-2016.

Within the framework of sociological research on consumer satisfaction with the quality of training specialists with higher education, respondents were asked only 4 questions:

- 1) What kind of qualities of young professionals who got education in universities and got a job in your organization (structural division) **do** you like?
- 2) What kind of qualities of young professionals who got education in universities and got a job in your organization (structural division) **don't** you like?
- 3) What is **not necessary** (not required) for specialists in the program which they take in the universities?
- 4) What kind of skills are **required** at work, however, universities do not include them into the program to prepare specialists?

The responses were grouped according to their “kinship” in the framework of the method used “affinity diagram” [12], one of the tools of the total quality management [13]. Pareto analysis was used to identify main problems [14].

3 Results and discussion

According to the results of the study, the respondents mentioned the following as the characteristics of the training of specialists for the enterprises of coal-mining complex causing *satisfaction* (required quality), which can be roughly grouped into the following groups:

1) professionally significant qualities of the person (interpersonal skills, commitment, desire to achieve the highest results, responsibility, curiosity, initiative, activity, sense of duty, discipline, diligence, ability to engage in the work quickly, and so on);

2) developed personal qualities (kindness, outlook, optimism, perseverance, hard-working, flexibility, reliability, ability and willingness to learn, adaptability, etc.);

3) availability of professional knowledge (knowledge of modern technologies, the ability to work with search tools and information processing, understanding of the profession);

4) uncommon thinking (a fresh perspective on task solution, production, innovative thinking).

35% of respondents noted the absence of a close connection between the content of educational programs and the requirements of the customer, excessive theorization of education, stereotyped training. These characteristics in the preparation of specialists with higher education are *indifferent* in accordance with the Kano model for employers. However, the presence of such characteristics reduces the level of customer satisfaction with the quality of products offered to them.

Among the *unacceptable qualities* for specialists with higher education the respondents named:

1) lack of formed professionally significant qualities of the person, such as: “not able to take independent decisions”, “lack of discipline”, “lack of zeal to work”, “frivolous attitude to work”, “lack of initiative”, “lack of subordination”, etc.;

2) presence of a number of personality qualities that impede the normal implementation of tasks, decision-making, conflict-free communication in the team: infirmity, hesitation, excessive ambition, “claims in the official position do not meet existing knowledge”;

3) lack of specialized knowledge in the chosen specialty;

4) lack of practical training.

As *attractive* characteristics of specialist with higher education, which give unexpected value to the employer and could cause admiration, the respondents indicated:

1) developed individual professionally significant personal qualities (responsibility, discipline, “the seriousness with respect to given task”, team work, desire of self-development, etc.);

2) general professional knowledge (“human resource management”, “computer skills”, “the ability to search for information”);

3) specialized knowledge of chosen profession;

4) practical skills of the specialist;

5) consumer demands are matching with specialization.

These findings allowed to form a “quality profile” of training specialists with higher education for the enterprises of coal-mining complex (see Figure 1).

Quality parameters, which are required for the specialists with higher education according to employers’ answers (the “A” position), are based on the answers to the questions: “What kind of qualities of young professionals who got education in universities and got a job in your organization (structural division) do you like,?” and “What kind of skills are required at work, however, universities do not include them into the program to prepare specialists?”

In turn, the quality parameters, underdevelopment of which cause negative reaction for the consumer (the “B” position) were obtained in the framework of the answers to the questions: “What kind of qualities of young professionals who got education in universities and got a job in your organization (structural division) don’t you like?” and “What is not necessary (not required) for specialists in the program which they take in the universities?”

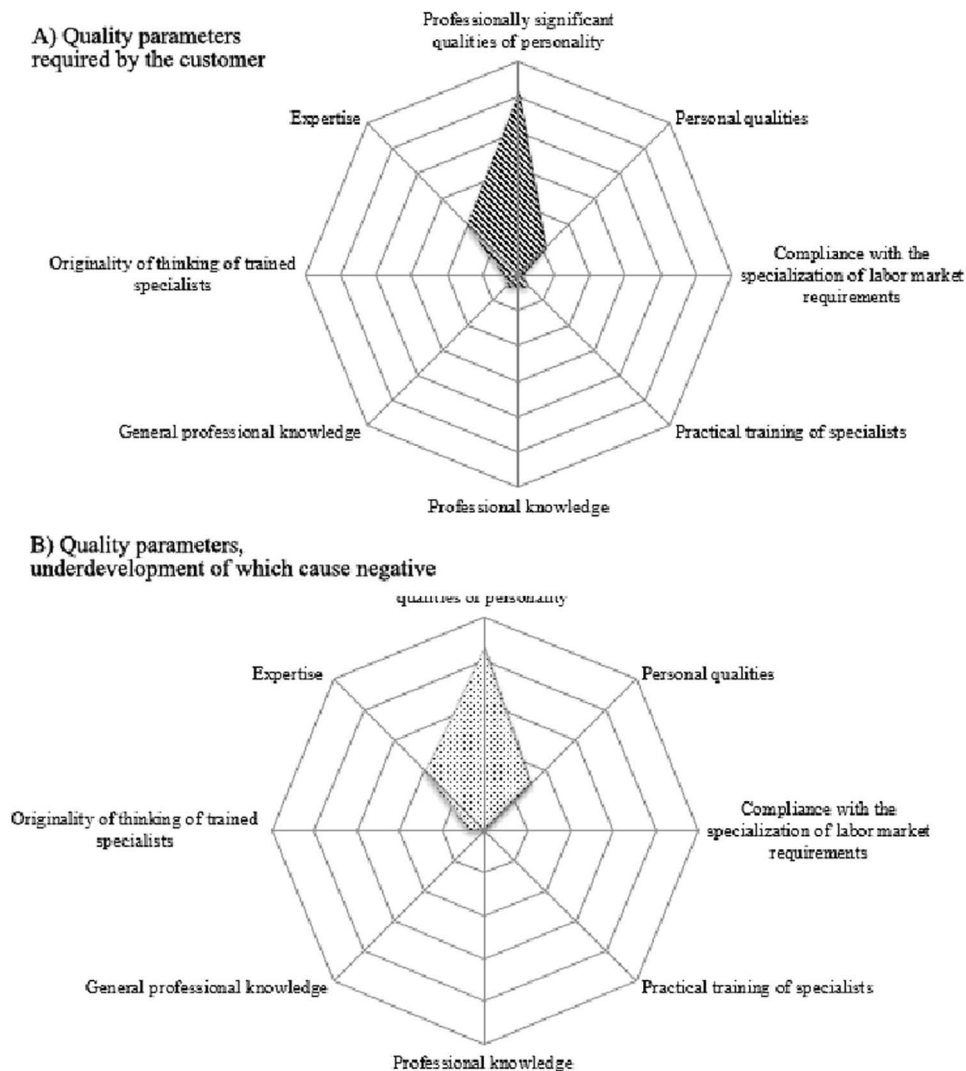


Fig. 1. “Quality profile” of training specialists with higher education for the enterprises of coal-mining complex

Comparing the formed quality profiles of training of specialists with higher education, it should be noted that for consumers, when they hire specialists with higher education, extremely important are:

- 1) development of professionally significant qualities of the person. If the specialists with higher education do not have such qualities, it causes extreme dissatisfaction of employers, at a sufficiently high level of development of such qualities - the admiration and affection;
- 2) availability of practical skills. If the specialists with higher education do not have such skills, employers consider a serious disadvantage of higher education, at a sufficiently high level of development of such skills – make them excited;
- 3) availability of expertise. The high level of development of such skills of specialists with higher education is able to arouse the admiration of the employer;
- 4) developed personal skills.

These qualities are included in the *basic* category.

4 Conclusion

Results of the study show that the employer is not satisfied with the quality of training specialists with higher education. He does not get on a regular basis the “product”, which would be fully consistent with his ideas about the high level of training in all aspects of the quality required for the implementation of the organization's strategic goals. In support of this, it may be noted, for example, that some specialists can have the same qualities which are formed at a high level (professionally significant qualities of personality, personal qualities, professional knowledge, practical skills), which causes the affection and admiration of the employer, and other specialists do not have such qualities and skills and it causes criticism by employers.

In the existing system of relations, the employer is not burdened with obligations, not interested and does not consider it necessary to inform universities about what they should do to form desired qualities of specialists with higher education in the process of their education.

Analysis of “quality profile” of training specialists gives an opportunity to the universities to “hear the voice of the customer”, define strategic positions and organize work on the further quality function deployment [15] of training of specialists with higher education, demanded by the labour market.

However, to achieve the desired result it is necessary to build a system of cooperation of universities and consumers of their “products” so that it is possible not just only manage the process of training and improve its quality, but also provide high-speed training of “consumer”. It is critically important and necessary to ensure competitive advantage and survival of the coal-mining companies in the current economic conditions.

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