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THE MARKETING APPROACH TO MANAGING THE QUALITY OF COMPANY'S PRODUCTS BASED ON INDUSTRIAL AND MANUFACTURING ENGINEERING IN THE CONDITIONS OF TRANSNATIONAL CAPITAL TRANSFORMATION

Abstract: *The purpose of this paper is to develop the marketing approach to managing the quality of a company's products based on industrial and manufacturing engineering in the conditions of transnational capital transformation, which takes into account the specifics of developed and developing countries. Originality and novelty of this research consist in its studying the new approach to management of a company's products' quality based on industrial and manufacturing engineering and the process of its formation in the conditions of transnational capital transformation at the theoretical level of economics and determining the perspectives and offering the recommendations for stimulation of the successful transition and practical application of the new approach with the help of marketing. The developed marketing approach to management of a company's products' quality based on industrial and manufacturing engineering will allow developing and transition economies to successfully adapt to the conditions of transnational capital transformation and to obtain advantages from these conditions due to attraction of foreign direct investment, the fullest (by means of quality) satisfaction of domestic demand, acceleration of innovative development of entrepreneurship and transnational corporations, and obtaining of sustainable strategic competitive advantages by means of digitalization based on industrial and manufacturing engineering.*

Keywords: *Quality; Marketing; Quality Management; Transformation of Transnational Capital; Digitalization; Industrial and Manufacturing Engineering.*

1. Introduction

Quality of company's products, provided on the basis of industrial and manufacturing engineering, forms the strategic foundation of development of modern transnational corporations. This new economic practice has formed under the influence of

transnational capital transformation in recent years. The basic model of transnational corporations management envisaged their aggressive competitive struggle and ousting of local companies from new markets. Coming to local markets, transnational corporations usually attracted consumers with cheaper products.

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The network organization of business with hazardous production with low ecological standards and cheap human resources allowed transnational corporations saving on wages and on financing the measures on increase of ecological effectiveness of production. Together with collection of orders from around the world, networkization allowed obtaining advantages from “scale effect”. Due to this, transnational corporations took their products to the local markets – in large volumes and with lower prices (price dumping), which ensured their competitiveness.

Formation of “knowledge society” and the digital economy stimulated the increase of the level of consumer awareness and responsibility. In their turn, governments also increased requirements to the activities of companies and corporations. A new model of transnational corporations management envisages their “healthier” (less destructive) competition. In a new model, competitiveness is determined by quality of products. This is noted in “Digitalization and the Transnational Corporations”, CIMR Research Working Paper Series Working Paper No. 45 (Ietto-Gillies, 2020).

On the one hand, markets around the world have a lot of similar conveyor products, while demand for individualized products grows. On the other hand, consumers in developed and developing countries are ready to pay more for responsible (socio-oriented) production. This stimulates the transition of transnational corporations to “smart” networkization, which envisages optimization of production and logistics with the help of AI, which allows keeping expenditures at a low level and preventing a large growth of prices. Production departments use skilled digital personnel, and transnational corporations manifest high social responsibility on the whole.

Thus, industrial and manufacturing engineering – as a manifestation of technical complexity and technological

progressiveness – determines the quality of products companies in the conditions of transnational capital transformation. The process of transition to a new model of transnational corporations management is complicated due to unpreparedness of the business processes of transnational corporations for achievement of high quality of products.

The working hypothesis of this research is that unlike the provision of pricing and quantitative accessibility, achievement of high quality of products requires close connection between a transnational corporation and market. This connection is necessary for determining changes in consumer preferences and for information support for the characteristics of products’ quality for strengthening of loyalty and demand for it in the target market. A perspective mechanism of establishment, support, and strengthening of the connection between corporation and market is marketing.

In developed countries, where the presence of transnational capital is larger due to higher investment attractiveness of economy and where the highest level of digitalization and progressiveness of society and marketing activity in the corporate environment are achieved, the highest progress in transition to a new model of transnational corporations management has been reached. That’s why scientific support for marketing of managing the quality of company’s products based on industrial and manufacturing engineering in developing countries is necessary for reducing the gap between them and developed countries.

This work aims at developing the marketing approach to managing the quality of a company’s products based on industrial and manufacturing engineering in the conditions of transnational capital transformation, which takes into account the specifics of developed and developing countries. Originality and novelty of this research consist in its studying the new approach to

management of a company's products' quality based on industrial and manufacturing engineering and the process of its formation in the conditions of transnational capital transformation at the theoretical level of economics and determining the perspectives and offering the recommendations for stimulation of the successful transition and practical application of the new approach with the help of marketing.

The structure of this paper is as follows. Introduction is followed by literature review, which contains gap analysis, and description of the information and methodological basis of the research. Then, results on the following three spheres are given. 1st sphere: contribution of management of quality of company's products based on industrial and manufacturing engineering to transformation of transnational capital in developed and developing countries. 2nd sphere: perspectives of transition to a new model of transnational corporations management with the help of increase of products' quality based on industrial and manufacturing engineering. 3rd sphere: recommendations for improvement of the practice of managing the quality of company's products based on industrial and manufacturing engineering with the help of marketing. Conclusion comes at the end of the work.

2. Literature Review

The modern requirements to quality of products from sophisticated consumers are discussed in the following works. Gök et al. (2019) note the influence of quality management on customers' satisfaction, explaining this by the indirect effect of product's perceived quality. Sumardi and Fernandes (2020) study quality of services and characteristics of a product as an environment and point out the influence of quality management on organization's efficiency. Whang (2017) describes comparative advantages and connection

between products' quality and competitiveness of companies

Adabe et al. (2019) writes about the influence of contractual agriculture on the increase of products' quality (by the example of Togo). Georgiev and Georgiev (2017) prove the evolution of understanding of products' quality by top management in Eastern Europe since the downfall of communism (by the example of Bulgaria). Sepe and Pitt (2017) study urban branding and location as a product from the positions of quality. Lin et al. (2018) prove the influence of reserves' efficiency on quality of products and determine the indirect effect of financial indicators. Wang et al. (2019) consider emotions as a signal of product's quality and describe their influence on the decision on purchase based on customer reviews on Internet.

Das Guru and Paulssen (2020) study quality of products, assessed by buyers. Rosillo-Díaz et al. (2019) perform an inter-cultural analysis of perceived quality of product, supposed risk, and intention to perform a purchase on the e-commerce platforms. Wang et al. (2017) deem it necessary to transfer information on quality and safety of consumer goods and determine the perspective of using social networks for this. Boyle et al. (2018) point out the interconnection between the price and quality in categories of durable goods and own trademarks.

The theoretical and practical issues of managing the quality of company's products based on industrial and manufacturing engineering in the conditions of the digital economy and Industry 4.0 are studied in the works Popkova and Sergi (2020), Sozinova (2019), Lopes et al. (2020), and Shahin (2019).

Grandinetti et al. (2020) write than the Fourth industrial revolution and digital servitization influence quality of interrelations in Italian B2B production companies. Enes and Silva (2020) describe the perspectives of increase of quality of

transportation services (by the example of a shop warehouse in a retail food company).

Feriyanto (2019) notes a large influence of quality of human development factors on the rates of economic growth (by the example of Yogyakarta province). Pendiuc (2012) substantiates the ways of increasing the effectiveness of quality management in commercial companies under the guidance of the local council of Romania in the period after joining the European market. Niewczas (2014) deems it necessary to develop consumers' knowledge on food products and systems of provision of security of food products and provision of quality.

The marketing aspects of managing the quality of company's products are studied in publications of the following authors. Fokina et al. (2018) offers marketing tools of increasing the effectiveness of activities of entrepreneurial structures in the conditions of import substitution. Sozinova (2018a) opposes effectiveness to reorganization and deems it necessary to apply information technologies in solving the marketing tasks of modern companies. Sozinova et al. (2018) treat the effectiveness of business structures' marketing as the basis of import substitution in Russia and note the important role of information technologies.

Sozinova (2018b) develops a marketing concept of managing the reorganization of entrepreneurial structures with the use of the latest information technologies. Sozinova et al (2017a) and Sozinova et al (2017b) develop a concept of marketing management of companies' transformation processes. Solimun and Fernandes (2018) prove the intermediary effect of customers' satisfaction in the interconnection between quality of services and orientation at services and the strategy of a marketing complex and customers' loyalty. Ali et al. (2020) note the influence of entrepreneurial orientation, market orientation, and general management of quality on efficiency (based on the data of small and medium enterprises in Saudi Arabia).

Iqbal et al. (2020) substantiate the interconnection between competition in commodity market and quality of analysts' forecasts (based on empirical data of companies trading in the Chinese market). Iqbal et al. (2017) model competition in the commodity market and quality of accounting reports (based on China's transition economy). Finne and Grönroos (2017) deem it expedient to develop marketing communications that are integrated with consumer. Oliva and Kelle (2018) compare the markets of Brazil and France and note the ethical gap in companies' marketing practices.

The tendencies of transnational capital transformation and a new model of transnational corporations management are reflected in the studies of the following experts.

Zhenyu and Taltavull (2020) describe international movement of capital in the Spain's real estate sector. Hain and Jurowetzki (2018) note the development of local competencies and the inflow of international venture capital in countries with a low level of income (by the example of foreign investments in hi-tech in Kenya's Silicon Savannah).

Pezeshkan et al. (2019) point out the risks, opportunities, and international syndication of venture capital in China. Omoteso and Yusuf (2017) study reporting relationships in the developing world and provide arguments in favor of a mandatory international mechanism.

Yao and Schwarz (2017) conduct a thematic study of Mercedes-Benz Arena in Shanghai (China) and note transformations in the practices of managing the objects of transnational corporations and local integration.

Analysis of the contents of the above publications shows a high level of elaboration of certain components of the set problem. Thus, the theoretical basis of the research is reliable, but the problem's elaboration is fragmentary. Gap analysis shows that specifics of using marketing in

managing company's products' quality based on industrial and manufacturing engineering in the conditions of transnational capital transformation are not studied sufficiently, and differences in implementation of a new (quality-oriented) model of transnational corporations management in developed and developing countries are not determined. This research aims at filling these gaps.

3. Materials and methodology

Regression analysis is used for substantiating the tendency of transnational capital transformation. We built regression curves that reflect the influence of share of hi-tech products in the structure of industrial export (indicator of quality of the products of transnational corporations, provided with the help of industrial and manufacturing engineering) on the volume of incoming foreign direct investment (indicator of transnational capital).

In the traditional model of transnational corporations management, quality of company's products based on industrial and manufacturing engineering does not influence the inflow of transnational capital, which depends on liberality of state regulation and accessibility of cheap human resources. In a new model of transnational corporations management, quality of company's products based on industrial and manufacturing engineering determines the inflow of transnational capital in economy. That's why depending on the character and strength of connection (regression, correlation), it is possible to judge the level of the tendency of transnational capital transformation in economy and perform international comparisons.

The research objects are top 8 developed and top 8 developing countries by the volume of incoming foreign direct investment in 2020.

The names and the structure of categories of countries according to the UNCTAD classification are used. Though in World Investment Report for 2020 (UNCTAD, 2020b), classification of countries is not given, and just the volume of investments is provided; in Global investment trends and prospects 2019 (2019 report, UNCTAD, 2020a), countries are divided into categories that are used in this paper. The data on hi-tech export are taken from the statistics of World Bank (2020). Statistical characteristics of the selection of countries are given in Figure 1.

As shown in Figure 1, the largest inflow of foreign direct investment in 2020 is observed in the USA (USD 246 billion), China (USD 141 billion), and Singapore (USD 92 billion). The largest share of hi-tech products in the structure of hi-tech export is observed in Singapore (52%) and Hong Kong (66%).

Correlation analysis is used for determining the contribution of managing the quality of company's products based on industrial and manufacturing engineering to transformation of transnational capital in developed and developing countries. The connection between incoming foreign direct investment and share of hi-tech products in the structure of industrial export in the given categories of countries is determined.

Regression analysis and simplex method are used for determining the perspectives of transition to a new model of transnational corporations management with the help of increase of products' quality based on industrial and manufacturing engineering. Regression analysis is used for determining the dependencies between the factors of quality of company's products based on industrial and manufacturing engineering and share of hi-tech products in the structure of industrial export.

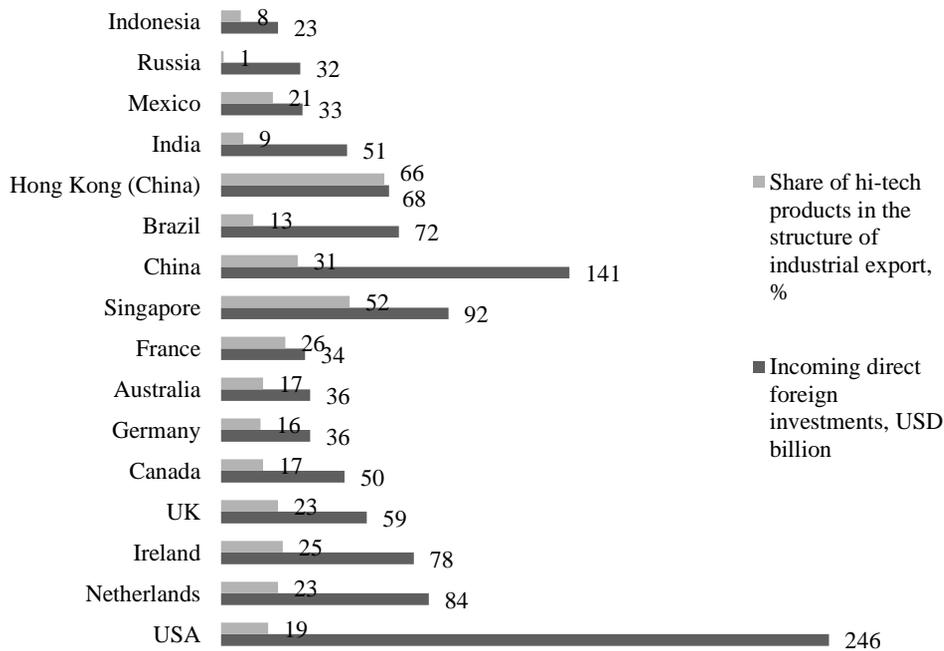


Figure 1. Hi-tech export and transnational capital in developed and developing countries in 2020.

Source: compiled by the authors based on UNCTAD (2020b), World Bank (2020).

Simplex method is used for polycriterial optimization based on the established regression dependencies and for determining the target values of the factors of quality of company’s products based on industrial and manufacturing engineering, at which developing countries achieve the volume of incoming foreign direct investment that conforms to the level of developed countries. The factors of quality of company’s products based on industrial and manufacturing engineering are determined in view of the existing directions of a company’s marketing activities. The indicators for quantitative measuring of these values factors are taken from 2019 World Digital Competitiveness Report – to reflect not just managerial practices but practices that are based on industrial and manufacturing engineering – i.e., specific for the digital economy. The data are taken from one report for preventing the distortion of the research result and

ensuring the maximum compatibility of data and precision of calculations. The following factors are distinguished:

- personnel, assessed with the help of the generalized indicator “knowledge”, which reflects digital competencies of companies’ employees and availability of foreign skilled personnel, as well as the general level of development of science and education in economy;
- Investments, assessed with the help of the generalized indicator “capital”, which reflects accessibility of financial capital in economy (development of the banking system and venture investments) and business’s investments in telecommunications;
- Innovations, assessed with the help of the generalized indicator “business agility”, which reflects flexibility of companies, transfer of knowledge and technologies, robotization of production, and application

of big data and intellectual analytics in entrepreneurship;

– sales, assessed with the help of the generalized indicator “adaptive attitudes”, which reflects activity of population in the digital sphere (readiness for digital marketing research), development of e-commerce, and society’s attitude towards globalization.

Personnel management and investments in telecommunications are the practices of non-commercial (social) marketing; management is innovations and sales is the practice of commercial marketing. Due to their differentiation, this research allows determining the differences in significance

of commercial and non-commercial marketing for managing the quality of company’s products based on industrial and manufacturing engineering in the conditions of transnational capital transformation in developed and developing countries in 2020.

As the factors of quality of company’s products based on industrial and manufacturing engineering are measured in positions (the smaller the number, the better) and share of hi-tech export – in per cent, negative correlation dependencies are considered positive. The selection of statistical data for the research is given in Table 1.

Table 1. The factors of quality of company’s products based on industrial and manufacturing engineering and the manifestations of transnational capital transformation in developed and developing countries in 2020.

Category	Country	FDI inflows, billions of dollars	Factors of quality of company’s products based on industrial and manufacturing engineering, positions 1-63				High-technology exports, % of manufactured exports
			(indicators’ titles that are used in this paper)				
			Personnel	Investments	Innovations	Sales	
			(indicators’ original titles)				
		Knowledge	Capital	Business agility	Adaptive attitudes		
Developed economies	USA	246	1	1	2	2	19
	Netherlands	84	13	5	7	9	23
	Ireland	78	24	49	9	3	25
	UK	59	14	22	26	10	23
	Canada	50	5	10	16	17	17
	Germany	36	12	17	11	16	16
	Australia	36	15	19	35	7	17
	France	34	20	18	39	36	26
Developing and transition economies	Singapore	92	3	8	6	19	52
	China	141	18	32	1	24	31
	Brazil	72	59	61	58	33	13
	Hong Kong (China)	68	7	6	8	12	66
	India	51	38	3	29	54	9
	Mexico	33	52	47	51	47	21
	Russia	32	22	57	54	40	1
	Indonesia	23	56	26	21	60	8

Source: compiled by the authors based on IMD (2020), UNCTAD (2020b), World Bank (2020).

4. Results

4.1 Contribution of company's products' quality management based on industrial and manufacturing engineering to transformation of transnational capital in developed and developing countries

For substantiating the tendency of transnational capital transformation, let us use regression curves in Figure 2, which reflect dependence of the volume of incoming foreign direct investment on share of hi-tech products in the structure of industrial export in developed and

developing countries.

Regression curves (Figure 2) show that the tendency of transnational capital transformation is not manifested in developed economies. Share of hi-tech products in the structure of industrial export (indicator of quality of products of transnational corporations, provided with the help of industrial and manufacturing engineering) has a weak (correlation 0.22%) and negative (regression USD -0.8425 billion) influence on the volume of incoming foreign direct investment (indicator of transnational capital).

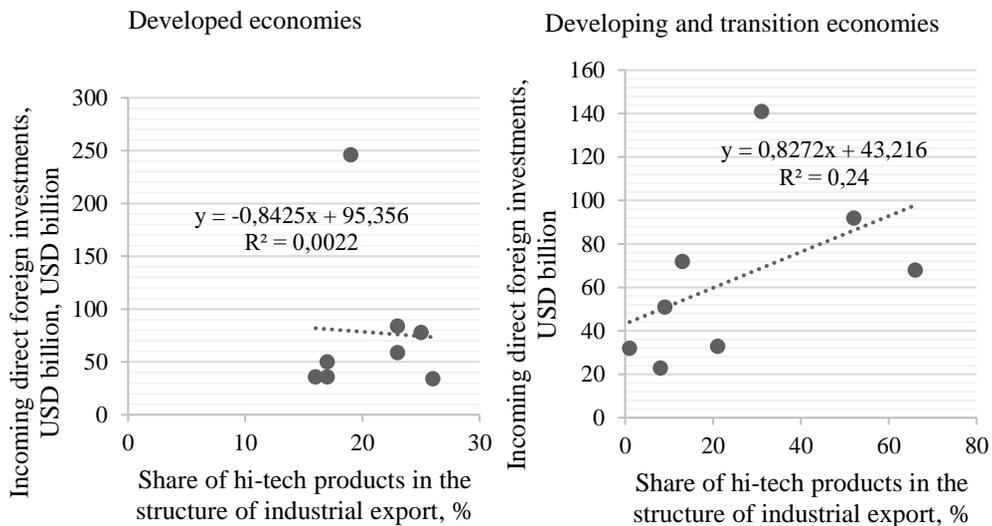


Figure 2. Regression curves of dependence of foreign direct investment on share of hi-tech products

Source: calculated and compiled by the authors.

In developing and transition economies, the tendency of transnational capital transformation is rather visible. Increase of share of hi-tech products in the structure of industrial export (indicator of quality of products of transnational corporations, provided with the help of industrial and manufacturing engineering) by 1% leads to growth of the volume of incoming foreign direct investment (indicator of transnational

capital) by USD 0.8272 billion, correlation 24%.

For determining the contribution of management of company's products' quality based on industrial and manufacturing engineering to transformation of transnational capital, let us use the results of correlation analysis by the example of developed (Figure 3) and developing (Figure 4) countries.

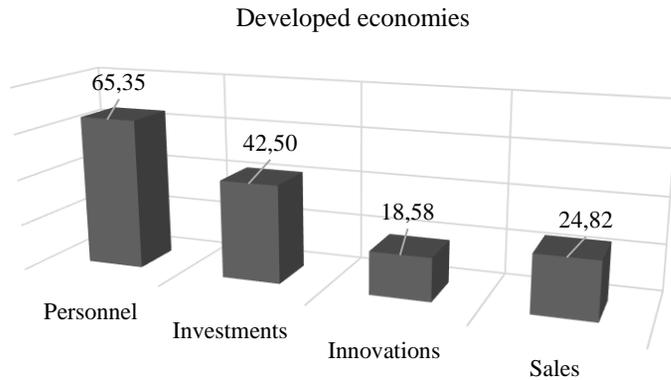


Figure 3. Correlation between the factors of managing the quality of company’s products based on industrial and manufacturing engineering and share of hi-tech products in developed economies, %.

Source: calculated and compiled by the authors.

As shown in Figure 3, share of hi-tech products in developed economies does not depend on the factors of managing the quality of company’s products based on industrial and manufacturing engineering, which confirms the results of regression analysis (Figure 2). This is also confirmed by positive coefficients of correlation: 65.35% with personnel, 42.50% with investments, 18.58% with innovations, and 24.82% with sales.

Therefore, growth of quality of company’s products based on industrial and manufacturing engineering (improvement of positions in the ranking) leads to reduction of share of hi-tech products. This shows that developed economies implement the basic model of transnational corporations management, which is oriented at price and accessibility of products, but not at quality. That’s why it is not expedient here to take into account the experience of developed economies.

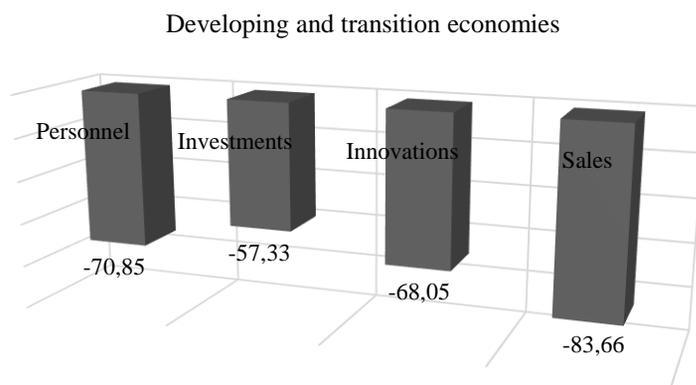


Figure 4. Correlation between the factors of managing the quality of company’s products based on industrial and manufacturing engineering and share of hi-tech products in developing economies, %.

Source: calculated and compiled by the authors.

As shown in Figure 4, share of hi-tech products in developing and transition economies is largely determined by the influence of the factors of managing the quality of company's products based on industrial and manufacturing engineering – which is shown by the negative values of all coefficients of correlation. The most significant factor is sales (-83.66%), which is followed by personnel (-70.85%), innovations (-68.05%), and investments (-57.33%).

Therefore, growth of quality of company's products based on industrial and manufacturing engineering (improvement of positions in the ranking) leads to increase of share of hi-tech products. This shows that developing and transition economies implement a new model of transnational corporations management, which is oriented at quality. That's why it is expedient to focus on the experience of developing and transition economies.

4.2 Perspectives of transition to a new model of transnational corporations management with the help of increase of products' quality based on industrial and manufacturing engineering

For determining the perspectives of transition to a new model of transnational corporations management with the help of increase of products' quality based on industrial and manufacturing engineering, let us solve an economic and mathematical task of multiparametric optimization. The essence of the task consists in determining the optimal combination of the factors of products' quality based on industrial and manufacturing engineering in developing and transition economies, at which their incoming volume of foreign direct investment reaches the level of developed economies.

According to the data from Table 1, average volume of incoming foreign direct

investment among developed economies in 2020 constitutes USD 77.88 billion, which is by 21.69% higher than among developing and transition economies (USD 64 billion). Here we suppose that in the short-term (until 2021-2022), increase of the volume of incoming foreign direct investment in developing and transition economies by 25% cannot be achieved, and long-term planning (more than four years) is not expedient due to the dynamic changes of the market environment. That's why this work is oriented at the mid-term period – until 2024.

According to the built regression curve (Figure 1), volume of incoming foreign direct investment in developing and transition economies will constitute USD 77.88 billion with share of hi-tech export that accounts for 41.91% in the structure of industrial export. Share of hi-tech export until 2024 in developing and transition economies should grow from 25.13% (on average) by 66.79%.

For building a model of multiple linear regression based on data from Table 1, let us use the following symbols: personnel – x_1 , investments – x_2 , innovations – x_3 , sales – x_4 , share of hi-tech products in the structure of industrial export – y . The following regression equation is compiled: $y=77.62+0.31*x_1-0.51*x_2-0.04*x_3-1.27*x_4$; correlation coefficient constitutes 94.81% (close connection between the indicators). Solution to the formulated optimization task is presented in Table 2.

As shown in Table 2, the optimal combination of the factors of companies' products' quality based on industrial and manufacturing engineering in developing and transition economies for bringing the share of hi-tech products in the structure of hi-tech export up to 41.91% in the period until 2024 is as follows: personnel – 31,88th position, investments – 26,74th position, innovations – 28,29th position, and sales – 24,25th position.

Table 2. Solution to the optimization task.

Indicator	Symbol	Average value in 2020	Target value in 2024	Growth of value in 2024 as compared to 2020, %	
Factors of quality of company's products based on industrial and manufacturing engineering	Personnel	x_1	31.88	31.88	0.00
	Investments	x_2	30.00	26.74	-10.87
	Innovations	x_3	28.50	28.29	-0.74
	Sales	x_4	36.13	24.25	-32.88
Share of hi-tech products in the structure of industrial export	y	25.13	41.91	66.81	

Source: calculated and compiled by the authors.

According to Table 2, target growth of the factors of quality of company's products based on industrial and manufacturing engineering for optimization of the share of export of hi-tech products in the structure of industrial export and, as a result, for bringing

the volume of incoming foreign direct investment to the level of developed economies in the conditions of transnational capital transformation in developing and transition economies in the period until 2024 is shown in Figure 5.

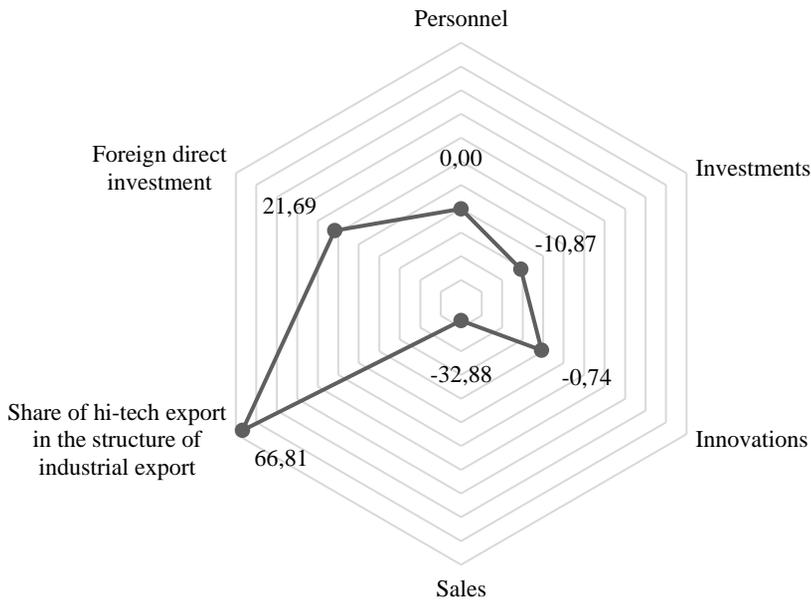


Figure 5. Target growth of the factors of quality of company's products based on industrial and manufacturing engineering and results for export and investments.

Source: calculated and compiled by the authors.

As shown in Figure 5, personnel should be preserved at the 2020 level, investments should grow (improvement of position in the ranking) by 10.87%, innovations - by 0.74%, and sales – by 32.88%. This will allow achieving the synergetic effect in the form of strong growth of the share of hi-tech products in the structure of industrial export (66.81%) and, as a result, the target growth of the volume of incoming foreign direct investment (32.69%).

4.3 Recommendations for improving the practice of managing the quality of company’s products based on industrial and manufacturing engineering with the help of marketing

For improving the practice of managing the quality of company’s products based on industrial and manufacturing engineering with the help of marketing, the recommendations (practical implications) are offer in view of the determined target landmarks of quantitative improvement of the selected factors (Table 3).

Table 3. Quality of management of company’s products’ quality based on industrial and manufacturing engineering with the help of marketing.

Practical implications	Factors of quality of company’s products based on industrial and manufacturing engineering, which are managed with the help of marketing		
	Marketing of investments	Marketing of innovations	Sales marketing
Marketing research	quality of products as a criterion of investment attractiveness of business	assessment of treatment of quality at all stages of the innovative process	determination of the required characteristics of quality
Marketing of interrelations	demonstration of quality (marketing of impressions)		
	on production for investors – as a guarantee of quality and return of investments	for employees with the opportunity for subsidized purchase of products	in points of sales, including e-commerce
Digital marketing	marketing communications via e-mail with determination of B2B*-aspects of quality	“smart” control of quality and its promotion as a competitive advantage during production	advertising and PR of products in social networks with emphasis on its quality, collection of feedback regarding quality in CRM

*B2B – business-to-business.

Source: developed and compiled by the authors.

As shown in Table 3, for managing the quality of company’s products based on industrial and manufacturing engineering with the help of marketing in the conditions of transnational capital transformation in developing and transition economies, three perspective directions of practical implications are offered.

1st direction: marketing research. In marketing of investments, it is recommended to consider quality as a criterion of business’s investment attractiveness in the

course of discussion of opportunities and perspectives of attracting transnational capital with investors. In marketing of innovations, it is offered to evaluate the treatment of quality by the representatives of a company’s target audience at all stages of the innovative process in the course of test studies. In sales marketing, it is expedient to determine the popular characteristics of quality in the course of marketing research in the form of surveys and analysis of discussions at consumer forums.

2nd direction: marketing of interrelations. It envisages demonstration of quality (marketing of impressions) for the interested parties to be sure in high quality of company's products and to strive to its purchase, for development of loyalty to the products. In marketing of investments, there's a need for demonstration of quality in production for investors as a guarantee of quality and return of investments. In marketing of innovations, it is offered to show quality to the employees with a possibility of subsidized purchase of products. In sales marketing, it is expedient to show quality in sales points, including in the sphere of e-commerce.

3rd direction: digital marketing. In marketing of investments, it is offered to conduct marketing communications via e-mail in view of B2B (business-to-business) aspects of quality. In marketing of innovations, it is recommended to perform "smart" control of

quality and its promotion as a competitive advantage during production. In sales marketing, it is recommended to organize advertising and PR of products in social networks with the emphasis on its quality and collection of feedback in CRM.

Marketing mix of managing the quality of company's products based on industrial and manufacturing engineering in the conditions of transnational capital transformation in developing and transition economies is presented in Figure 6. It is given in a 4P model, for, as was proved above, marketing management of personnel (People в model of 5P) is not required for managing the quality of company's products based on industrial and manufacturing engineering, and other expanded models of marketing mix (6P, 7P) are developed for specific companies. That's why we provide the most general and universal model - 4P.

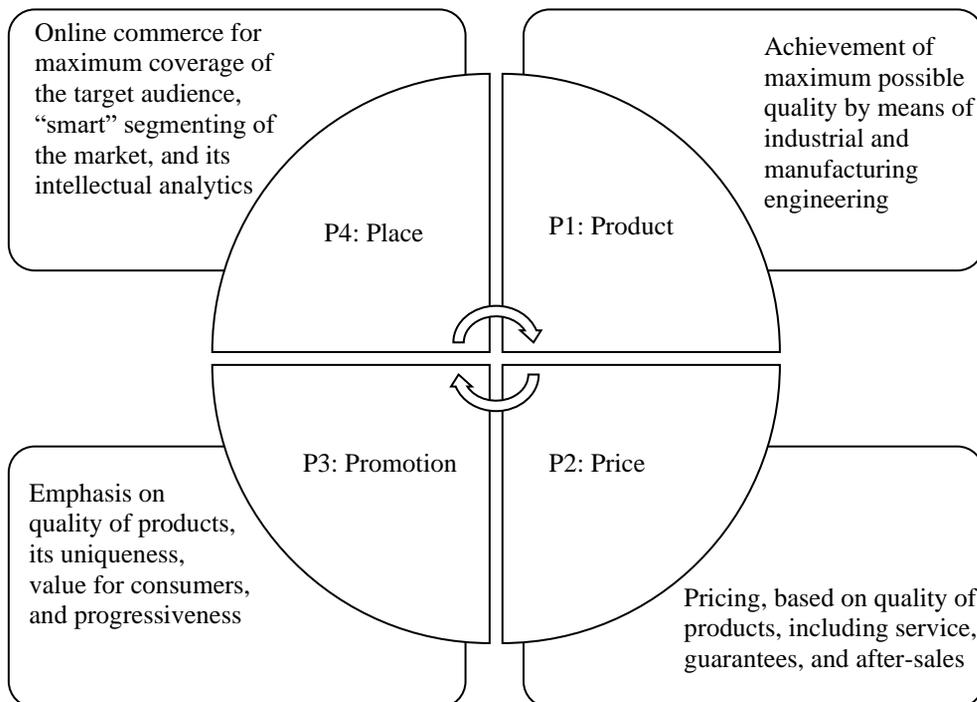


Figure 6. Marketing mix of managing the quality of company's products based on industrial and manufacturing engineering in the conditions of transnational capital transformation.

Source: developed and compiled by the authors.

As shown in Figure 6, the following recommendations optimization of marketing mix of managing the quality of company's products based on industrial and manufacturing engineering in the conditions of transnational capital transformation are offered. P1: Product is oriented at achievement of maximum possible quality by means of industrial and manufacturing engineering. P2: Price is connected to pricing based on products' quality, including service, guarantees, and after-sales. P3: Promotion with the emphasis on quality of products: its uniqueness, value for consumers, and progressiveness. P4: Place with preference for online commerce for maximum coverage of target audience, "smart" segmenting of market, and its intellectual analytics.

The offered recommendations for improving the practice of managing the quality of products based on industrial and manufacturing engineering with the help of marketing will provide the following advantages for companies in developing and transition economies in the conditions of transnational capital transformation. Companies will receive access to expanded transnational financing, which will start the mechanism of their strategic development. The inflow of venture investments in digitalization (industrial and manufacturing engineering) will accelerate the innovative activities of companies, and guarantee of high quality will allow preserving competitiveness in the long-term.

Transnational investors will be able to place investments with increased profitability with reduced risk – due to investments in development of companies that manufacture and sell high-quality products. Also, the final transition of transnational corporations to a new model of capital management in developing and transition economies will be performed, which will lead to their accelerated development, growth of competitiveness, and intensive inflow of transnational capital in their development. Its

balance and sustainability will be achieved at the level of the global economic system.

4. Conclusion

As a result of the research, the following conclusions have been obtained:

1. Quality of management of company's products based on industrial and manufacturing engineering in developing and transition economies contributes to the development of hi-tech export (cross correlation equals 69.97% on average). The inflow of foreign direct investments is by 24% explained by share of hi-tech products in the structure of industrial export. This stimulates transnational capital transformation and transition to a new model of transnational corporations management – which is oriented at quality;
2. In developing economies, quality that based on industrial and manufacturing engineering does not determine hi-tech export. Incoming foreign direct investments do not depend on hi-tech export. Therefore, the process of transnational capital transformation in developing economies does not take place or is distorted or specific. It is probably that the basic model of transnational corporations management will be preserved in these countries, which will take quality to the background;
3. The perspectives of final transition of developing and transition economies to a new model of transnational corporations management with the help of increase of products' quality based on industrial and manufacturing engineering are connected to improvement (increase of position in global digital competitiveness) of sales by 32.88%, investments by 10.87%, and innovations by 0.74%. Due to this, share of hi-tech products in the structure of industrial export will grow by 66.81%, and incoming foreign direct investments will grow by 21.69% - by 2024 they will reach the level of developed economies in 2020 (USD 77.88 billion);

4. For improving the practice of managing the quality of company's products based on industrial and manufacturing engineering, we offer marketing recommendations and an optimized complex of marketing mix, which envisages achievement of maximum possible quality by means of industrial and manufacturing engineering; pricing based on products' quality, including service, guarantees, and after-sales; emphasis on quality of products: its uniqueness, value for consumers, progressiveness, and online commerce for maximum coverage of target audience, "smart" segmenting of market, and its intellectual analytics.

The developed marketing approach to management of a company's products' quality based on industrial and manufacturing engineering will allow developing and transition economies to

successfully adapt to the conditions of transnational capital transformation and to obtain advantages from these conditions due to attraction of foreign direct investment, the fullest (by means of quality) satisfaction of internal demand, acceleration of innovative development of entrepreneurship and transnational corporations, and mastering of sustainable strategic competitive advantages by means of digitalization based on industrial and manufacturing engineering.

However, the problem of adapting developed economies to the conditions of transnational capital transformation remains unsolved. The determined practice of preserving the basic model of transnational corporations management in these countries requires thorough research, which should be performed in further works on this topic.

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