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INNOVATIVE TRANSFORMATIONS OF SCIENCE-INTENSIVE INDUSTRIES IN THE NATIONAL ECONOMY OF AZERBAIJAN: FROM ENGINEERING TO A DEVELOPED ICT SECTOR

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INTRODUCTION

Azerbaijan exports to other countries not only processed agricultural products, but also science-intensive and high-tech ICT services. If until 1990 the science-intensive industries of Azerbaijan were oil engineering, machine tool building, shipbuilding, instrument making, electrical engineering, then since 2013 Azerbaijan has become a space power and science-intensive and high-tech industries have become telecommunications and the ICT sector.

If the share of manufactured machine-building equipment in the world's imports and exports is now 0.1%, then the share of the turnover of ICT services in the world is equal to 14%. This study examines the role of innovative transformations in science-intensive and high-tech sectors of national economy of Azerbaijan. In 2021 the share of exports with high technological intensity increased to 13.6%, and imports with high technological intensity increased to 2.3%. Export of creative goods increased by 25 points for 2022. The volume of import and export operations on computer services has continued to increase since 2016 - in 2020, imports increased by 1.5 times compared to 2016, and exports increased by 167.8%. Let’s investigate the role innovations in science intensive sector of national economy of Azerbaijan from 1920-2023 years.

1. INNOVATIVE TRANSFORMATIONS IN THE SCIENCE-INTENSIVE SECTORS OF THE ECONOMY OF AZERBAIJAN FOR 1920-2023

The development of oil engineering in Azerbaijan and the issues of intensification of scientific and technical development in engineering are reflected in the works of S. Akhverdova; problems of organization and management of the machine-building complex of the Azerbaijan Republic in the works of T. Veliyev, M. Akhundov, T. Aliyev, M. Atakishiyev, G. Suleymanov. R. Agayev and B. Kadirov studied the problems of the scientific and technical potential of Azerbaijan in the conditions of transition to

the market; and T. Abbasov - problems of integration of science and production in Azerbaijan [1].

The following scientists-economists of Azerbaijan dealt with the organization of innovation management in industry: G.Ganjiev studied the development of science and its role in scientific and technological progress; M.Rubinshtein studied the problems of stimulating the process of innovation in economic activity; T.Huseynov was interested in ways to improve the use of fixed assets of the oil engineering industry in Azerbaijan and the problems of the efficiency of engineering in the scientific and technical development of society.

In addition, general methodological issues and organizational and managerial functions of innovations were covered in the works of economists-researchers such as G .Z. Yuzbashiyeva, R. Sultanova, N. Kurbanov, E. Kasymov, A. Abbasov and others [2].

Until 1920, the Azerbaijani industry was based both in joint-stock companies (for example, the Caspian Society), which included both shipbuilding and ship repair, metallurgical and metalworking plants, as well as large diversified engineering plants, and small tool repair plants [23-24].

During the years of industrialization (1920-1930) in the field of mastering new equipment and technologies were created only domestic samples of new equipment and technology in the field of drilling and oil production, and also were created the production of rods and deep-well pumps, oil equipment and equipment for sale to abroad. Products were sent not only to the oil-producing regions of Baku and Grozny, but also to the coal basin of Donetsk. During this years Azerbaijan enterprises were organized and implemented new management methods like as social competition.

In the period 1931-1940 were manufactured the first series of mud pumps, metal above, were introduced into production, electric hoists were put into operation, the first Soviet turbodrills, were developed a cementing unit, serial LT2-60 hoists, flushing units, was created oilfield equipment for drilling in offshore fields and for geological exploration, which was not the analogues all over the world. The new methods of production functioning include the transition from universalization to specialization, the organization of socialist competition, the organization of the Stakhanovist movement, the movement of “thousanders”. There is a spasmodic development of mechanical engineering and a downward trend in growth rates. Production expansion underway in an extensive way.

Scientific laboratories have been set up in “Azneft” and “Azneftemash” trusts, in company “Vseburneftemash“ to conduct experimental design, either for design and technological innovations in oil engineering and oil production. Was created the Main Research institute for Petroleum Engineering. Before the start of World War II, the oil

engineering plant was completely updated with the most modern equipment from the USA and England, due to which the latest turbodrills for oil production were produced not only for the USSR, but also for foreign countries [2].

But during the war, all oil engineering plants were evacuated to Perm (Russian Federation). In Baku, were functioned either military-profile factories or small-scale factories for the production of oilfield equipment and tools. A number of new types of products were mastered: auto-tractor parts, spare parts for compressors of the Clark system, diesel spare parts, power stations, lifts and washing units, spare parts for some imported tractors and cars, were applied new methods of steel smelting.

During these years, local resources are used to the maximum. Is organized the production of many types of raw materials, materials, semi-finished products in the republic, are used the substitutes for raw materials and semi-finished products in the production of some types of machine-building products. There is an expanded reproduction on the basis of extensive types of industry development.

For 1946-1960 "Azneftemash" Trust was reformed from the remaining 32 small engineering and metalworking plants. 9 new factories were organized in the field of the electrical industry, instrument making and household engineering [2].

In 1956-1963 all trusts were transformed into Machine-building State Department under Economic Council of Azerbaijan. The industry of Azerbaijan already consisted of six main areas: 1) metalworking, 2) mechanical engineering, 3) electrical industry, 4) instrument making, 5) household engineering and 6) building materials industry. About 770 types of new products and 1500 standard sizes were developed and put into operation. The main exporters were the countries of Asia Minor, Latin America, the socialist camp. These years saw radical innovations in oil engineering, for which the government of the USSR allocated subsidies for the renewal of eguipment. But there remained a fairly large amount of labor-intensive work requiring physical labor, mainly in the field of oil production.

The territorial-branch management structure was fully formed in Azerbaijan for 1964-1972. Small-, medium-, and large-scale plants united in USSR Department of Production Unit and Scientific&Production Unit. During these years, the bearing industry was also established. Were created about 184 samples of new types of machines, equipment, devices, apparats; was produced over 650 items of industrial products nomenclature; mastered the production of complex drilling rigs and blowout prevention equipment; produced products of power engineering, instrumentation, electrical industry, machine tool building. In this years has been prepared the Main plan for the development of subject specialization. More than 20,000 rationalization

proposals have been put into production. Features of industrial production are characterized by the absence of closed cycles of industrial production and a wide program for the disposal of industrial waste.

Improving innovations were next: modernization of equipment, the introduction of advanced technologies for the manufacture of oilfield equipment, the production of equipment for the separate operation of oil and gas, the introduction of a subject-industry type of specialization and its various types - nodal specialization, detailed specialization, measures for the specialization of technologies [1].

In 1973-1984 was born the electronic and radio industry of Azerbaijan. Are observed the improvement innovations, reorganization of production processes' management and transfer to intensification in manufacturing. During these years, the management system is partially transferred to a 3-level system, top and middle managers give preference to the development of program-targeted management methods. Over the years, 230 standard sizes of obsolete equipment have been removed from production, products of the electronic and radio industries, mechanical engineering, light and food industries have been mastered [3-4].

Will be applied the electrophysical and electrochemical processing methods, ultrasonic and electroerosive methods, group technological processes. The production of equipment for non-destructive control of production has been mastered. Has been arranged the export of oilfield equipment to the countries of the Middle East, Latin America, the countries of Union for Mutual Economic Assistance and have been organized the single orders for capitalist countries.

There is a development of new types of materials, polymers in parts and components of equipment, especially in instrument making and the electrical industry. Over the years, the industry of Azerbaijan has shown a trend of slow renewal of technological equipment and non-compliance with world technical requirements.

During the period of perestroika (1985-1991), various innovations were introduced in the field of industrial production's functioning and in the field of the rational use of economic management methods, such as independence and self-financing of production units from the site to the software, self-financing. Joint ventures are being created in the production of high-tech motors, in the field of household instrumentation (Azerbaijan-Italian company "Bakmil", Azerbaijan-Japanese company "Bakkonditsioner"). The production of household appliances based on import licenses is being mastered. Elements of remote and automatic control are produced. There is an increase in the share of automatic and semi-automatic, flow-mechanized and flow-conveyor lines, complex-mechanized shops and sections; deepening of nodal and technological specialization

and concentration of production [7].

Certification of machine-building products by quality categories is carried out. There is a decrease in metal consumption due to the use of synthetic materials. Are being created the first territorial-production complexes in the field of thermal power engineering. Is being achieved the access to the world market for products of instrument making, radio industry and electrical industry, as well as household engineering.

During the period 1992-2003 Azerbaijan's national economy has undergone a number of changes. If in the early 1990s the industry was still creating new models of oil equipment - new generation deep-well pumps, that meet the technical conditions of world standards, special vehicles, auto containers, new (more than 10) types of electric motors, electric motors low power, then since the middle of 1995 this has not been observed [5-6].

The privatization of small machine-building enterprises began simultaneously with the restructuring of industry. The government is developing programs for the revival of mechanical engineering in 1996, creating a draft of a new trade policy. Trade relations are expanding. Azerbaijan is creating new foreign economic relations with Iran, Turkey, Turkmenistan, Russia, Kazakhstan, Ukraine, Uzbekistan, Egypt. The experience of the Italian enterprises of the company Soilmek and Komerint in Milan in the field of household instrumentation is being introduced. But market relations dictate their own laws and many industries die off gradually [7].

Since 1990, the number of created new types of machines, equipment, devices, devices and automation equipment has decreased from 39 units to 8 units in 1995 [1-2], [25]. Among them, there were no samples, the technical level of which is higher than the level of the best domestic and foreign analogues. In addition, for 1991-1996 on average for the year were created 47.6% less of new types of machines, equipment, apparatus, instruments and automation tools.

Many industries have ceased to exist: instrument making, the electrical industry, ferrous metallurgy, the tool industry, machine tool building, the production of household appliances, and many backlogs of advanced technologies. Some large and medium-sized industrial enterprises cease to function. Small enterprises are being created in the field of repairing cars, computers, and calculators. Pharmaceutics, medical services, banking infrastructure, information technology and telecommunications are developing. At this time, a multi-structural economic system is being created, a triad of the economic management system is being formed: the state, the market, the hierarchy [5-6].

There are main shortcomings in the insufficient capital investments in scientific and production developments, an exorbitant long period of R&D development from idea to consumer in the form of scientific and technical

products, poor organization of innovation process management in industry, especially in the machine building of the republic. To solve this problem, it is necessary to use technical, technological, economic, organizational and social factors in the development of industrial production and rationalize the process of organizing innovation management [1-2]. The technological underdevelopment of the industry, including the machine-building complex of Azerbaijan, creates problems in the organization of innovations. Technological development is directly related to state support in the field of science, education and industry. Technological development is unthinkable without state intervention: through legal, financial or market-oriented mechanisms for regulating innovation processes [1-2].

Reconstruction and intensification process, development of new scientific and technical products and the use of high technologies for the means of production, the innovation cycle of transformations were important elements of the study of the innovation management process.

Table 1 reflects the industrial performance of Azerbaijan in the UNIDO ranking [32]. As can be seen from Table 1, the share of medium and high value-added sectors of the manufacturing industry, as well as the share of the manufacturing industry in total exports, decreased in 2011 compared to 2006 [8]. And the share of products of medium and high technological level in the export of the manufacturing industry, on the contrary, increased from 11.9% in 2006 to 13.9% in 2011. This is also due to the fact that since 2010 Azerbaijan began to develop ICT sector of the economy.

Table 1: Industrial indicators of Azerbaijan in the UNIDO rating [8, 32]

Indicators	2006	2010	2011
The share of medium and high technological level industries in the value added of the manufacturing industry, %	9,5	6,3	6,3
Share of products of medium and high technological level in manufacturing exports, %	11,9	17,2	13,9
Share of manufacturing industry in total exports, %	34,5	10,5	9,8

Since 1990, Azerbaijan has been transforming its economy. First, the market structure and its accompanying infrastructure developed (1992-2003): banking, insurance, financial and credit institutions. Further attention began to attract the tourism industry and related hotel business, food and restaurant business, banking services, ticketing and tourist insurance services, passenger transportation by road and air (2003-2023). Along with tourism, carpet weaving, the manufacture of scarves and daddies, leather goods and souvenirs also developed to satisfy the interest of foreign tourists.

Since 2013, Azerbaijan has become a space power and has been developing both its own and improving software and technologies for this

industry [13-15]. Electronic types of services are developing - e-government, e-banking, e-medicine, e-trade [14], e-commerce, etc. During the pandemic, the areas of e-banking [17], e-medicine, e-trade, e-education, e-training, e-sign, e-tourism and etc. Simultaneously with electronic services, telecommunications and information technologies have been developed [9-10].

During the years of the pandemic (2020-2022), Azerbaijan quickly switched to the digitalization of the national economy. The presence of satellites and a wide range of telecommunications equipment made it possible to cover all regions of the country with high-quality communications and ICT services [11-12].

Over the past 20 years (2003-2023), the structure of the national economy has undergone a number of changes - many branches of engineering and metalworking have lost their status, the former machine-building complex is now characterized mainly by oil engineering, the production of special vehicles and maritime transport. The chemical industry - only petrochemistry, the manufacture of plastics and polymer products.

2. Analysis and assessment of Azerbaijan's innovative transformations in the science-intensive sectors of the economy

The Azerbaijan government has focused on effective measures for the socio-economic development of the country. In January 2022, residents of industrial zones invested 6.4 billion manats in the country's economy, including in 2021 - 247.7 million manats. More than 9.7 thousand jobs were created. Under existing projects, it is additionally planned to invest more than 370 million manats of investments and create more than 2,400 permanent jobs. Non-oil sector of Azerbaijan grew in 2021 by 7.2%, foreign exchange reserves increased by 2.5 billion dollars USA.

Minimum wage on December 2021 became 300 manats, the subsistence minimum for the able-bodied population - 220 manats, the average wage – about 425 US dollars. Social spendings in 2022 will increase by 1 billion 649 million manats (AZN) and will reach the volume of 13 billion 850 manat (AZN) or 46.4% of state budget expenditures [27]. In 2021 exports reached 22.2 billion USA dollars, non-oil exports amounted to 2.7 billion USA dollars, exports in the non-oil sector increased by 870 million USA dollars (47.2%) compared to 2020. Exports of fruits and vegetables increased to 22.9 USA million dollars (in common 630.4 million US dollars), exports of the chemical industry increased by 2.9 times. The positive balance in foreign trade exceeded 10 billion USA dollars [16].

Radiophysics, laser technology, electronics, optoelectronics, chemistry and catalysis, cosmonautics, a number of new technologies and

inventions have led to the creation of science-based products [18]. The technologies that enable the creation of such products are called science-based technologies.

Today Azerbaijan is represented by more than 100 types of science-intensive and innovative products and services in the field of construction engineering; metal processing and detection of defects; in the field of purification and regeneration of liquids, oils, fuels; in the field of installation and repair of construction equipment; in the field of providing construction equipment services; in the field of electrical engineering; in the field of shipbuilding; in the automotive industry and etc. Among them are the following [31]:

– Device for laser scanning of objects - products of the company "Laser Gulf";

– Rent, rental of equipment for telecommunications, development of projects of telecommunication systems of the campaign - products and services of the campaigns "Fuadakva, JV", "Granit, AS Company"; “Criogen, JV”, “Altun Temel, JV”, “4Comfort, JV”, “ABC Consulting, JV”;

– Production of auto parts by subcontracting from “AST-M-Trans”;

– Manufacture of parts and units of general engineering from “AST-M-Trans”;

– SKD and SKD car assembly from “Berlin Wasser”;

– Exploration works – service of “Kangarli, JV” campaign;

– Production of models of industrial and residential buildings - products and services of the campaign "M Studio".

Since 2008, the sources of financing were not only investors, but also the enterprises themselves - 73.5% in the industry of Azerbaijan. Consider the data on investments, on technological costs and on profits in the industry of Azerbaijan for 2017-2020 (Table 2.).

As can be seen from Table 2. the pandemic has affected the economic performance of Azerbaijan's industry. For 4 years the indicators on investments (-14.5%), on profit (-18.0%), on net profit (-21.0%) worsened. But the cost of technological innovation has increased by about 2 times.

Azerbaijan's exported ICT services continue to grow, despite the fact that they are about 100 times less than imported ICT services. As can be seen from Table 6, this increase in the export of computer and peripheral equipment was 212.9%, in the export of telecommunication equipment it was 128.3%, and in the export of electronic equipment a 5.5 times increase was observed [28].

If we look at to Table 3., we will see that Internet communication, mobile phone communication service, telephone communication, as well as the sale of computer and peripheral equipment have the main share in the volume of product release and service provision in ICT sector of Azerbaijan [18].

Table 2: Investments, technological innovations' expenditures and profits in Azerbaijan industry (million AZN) [25-26]

Indicators	2017	2018	2019	2020	In 2020 to 2017, in %
Investments	10610.1	8497.2	9258.0	9065.3	-14.5
Total profit	25466.4	326443.1	30489.5	20884.2	-18.0
Net profit	23986.8	31104.8	28628.9	18949.6	-21.0
Expenditures to technological innovations	16.1	34.3	48.0	35.9	222.9

Table 3: Azerbaijan ICT sector's producing outputs and services, million AZN [28]

	2015	2017	2019	2021	In 2021 compared to 2015, %
Total:	1589,3	1688,0	2089,2	2249,6	141,5
From them: Internet communication	112,5	132,7	157,1	249,0	221,3
Other communication activities	137,1	174,5	264,9	260,1	189,7
Mobile phone communication service	874,3	857,0	912,2	980,9	112,2
Phone communication service	222,3	194,5	196,9	224,3	100,9
Sales of computer and peripheral equipment	27,3	22,3	35,5	46,0	168,5
Computer manufacturing	0,01	1,7	8,0	17,0	17 times

As can be seen from Table 3., the share of mobile phone communication in the export of ICT products and services is equal to 43.6%, the share of internet communication - 11.0%, the share of other communication activities - 11.6%, and the share of telephone communication - 10.0%. In 2021 compared to 2015, computer production increased 17 times, and internet communication increased by 221.3%.

In 2010-2018, despite a 10% decrease in ICT sector investments, ICT goods'production in Azerbaijan increased by 1.5 times, and import by 4.9 times. VAT increased by 56%, and the volume of investments decreased by 10% [24-25], [28].

Recording Table 4, the import of ICT products has increased by 4 times, and its share among the products imported into the country has increased by almost 2 times. The volume of capital investments decreased by 60.1%. ICT product output has increased about 41.6%, but the volume of added value has risen about 71.4% [22].

Table 4: Dynamics of technical and economic indicators of Azerbaijan ICT sector, million AZN and % [26]

Indicators	2015	2017	2019	2021	In 2021 compared to 2015, %
Product (service) output	1589,2	1688,0	2083,2	2249,7	141,6
The amount of added value created	970.7	1038,1	1293,3	1663,8	171,4
The share of created added value in GDP, %	1,8	1,5	1,6	1,8	
Investments focused on fixed capital	338,4	170,2	294,7	135,0	60,1
Import of ICT products	268,6	565,1	901,6	1083,2	403,3
Specific weight of imported ICT products in the value of products entered the country, %	2,8	3,7	3,9	5,4	
The number of employees working in the ICT sector, thousand man	20,1	18,1	19,3	21,1	104,9
The ratio of workers in ICT sector to the number of workers in the economy, %	1,3	1,2	1,3	1,4	

As shown in the "Azerbaijan industry" state statistic collection, the production volume of computer, electronic and optical products that underwent significant changes or were newly applied due to the level of innovation was 27.9% of all industrial products in 2019, and 5.7% in 2021. The weight of significantly changed or newly applied products in the machine-building industry was 1.1% in 2019 and 0.1% in 2021 [29, p.77].

Look at the Table 5. Expenditures of technological innovation shows that a significant part falls on the manufacturing industry, including the metallurgy, engineering, and food industries (Table 5.).

As can be seen from Table 5. the technological innovations mainly cover product innovations. But recently the innovations have increased in metallurgy and mechanical engineering, which update technological lines. Metallurgy and mechanical engineering enterprises are modernising their production and introducing up-to-date automated lines.

Table 6. shows knowledge-intensive products in the industry of Azerbaijan, which have no analogues in the world and which have been improved. As can be seen from Table 6. the creation of science-intensive products is of a spasmodic nature and depends on investments. In recent years the domestic enterprises have mainly used the internal sources of financing for innovation.

Capital investments in all branches of machinery are spasmodic in nature. Machinery is dominated by an extensive, labour-intensive method and a territorial-production orientation of expanding production. Expect of enterprises in the oil and petrochemical industries, of industrial park in the

city of Mingachevir [30] and of Sumgayit Technological Park [30-31] many republic enterprises are developing in a territorial-production way of expanding production, which most of all corresponds to the extensive type of industrial development.

Table 5: Expenditures to technological innovations in industry by types of innovations (thousand USA dollars) [25, p. 104]

Indicators	2017	2018	2019	2020	In 2020 to 2017, in %
All industry	16135.7	34353.6	48037.1	35919.8	222.6
-product innovations	10439.6	23298.7	38343.5	20059.2	192.1
-process innovations	5696.1	11054.9	9693.6	15860.6	278.4
Manufacturing	16104.0	32967.6	47658.5	34918.7	216.8
-product innovations	10438.6	22619.4	38053.5	19421.0	186.1
-process innovations	5665.4	10348.2	9605.0	15497.7	273.5
Manufacture of food products	81.5	-	208.7	8667.0	App. 100 times
-product innovations	81.5	-	208.7	8667.0	App. 100 times
Manufacture of beverages	151.0	338.0	642.0	-	-
-product innovations	-	336.0	642.0	-	-
-process innovations	151.0	2.0	-	-	-
Chemical industry	664.7	215.4	-	-	-
-product innovations	637.4	214.4	-	-	-
-process innovations	27.3	1.0	-	-	-
Manufacture of basic metals	72.0	144.0	4202.2	12479.2	173 times
-product innovations	72.0	144.0	4202.2	3983.2	55 times
-process innovations	-	-	-	8496.0	-
Machinery	13940.1	18432.5	15583.0	9510.3	-31.8
-product innovations	8620.7	18421.2	5983.0	3008.6	34.9
-process innovations	5319.4	11.3	9600.0	6501.7	122.2

The fourth Programme for the socio-economic development of Azerbaijan regions (2019-2023) suggests taking this circumstance into account and creating industrial and agricultural processing enterprises, taking into account innovative transformations [30].

Table 7. demonstrates how could the organizational resources increase the production efficiency of science-based products. Production processes improve and renew the funds in manufacturing fields, involve of technically and technologically complex products with high R&D expenditure, optimize the organizational relations, attract all of financial resources [18-19].

One of the main conditions for Azerbaijan's participation in the world economy is the activation of innovation and scientific and technical activities, the structural reconstruction of the economy on basis of development

of high-tech science-intensive products. At present, countries that do not apply new scientific and technological innovations in production cannot compete in the world market. Thus, the most important factor to take into account in the development of enterprise development strategies is the application of science-based technologies and scientific innovations in production.

Table 6: The volume of innovation products by level of innovation and by kinds of economic activity, thousand AZN [25, p. 102]

	Production which has undergone to significant changes or again restored			İmproved products		
	2018	2019	2020	2018	2019	2020
All industry	28952.2	21698.1	11759.7	855.3	3905.9	16828.4
Manufacturing	28736.9	19202.4	9344.2	855.3	3905.9	16828.4
Manufacture of food products	831.2	328.0	-	-	210	-
Chemical industry	55.0	-	-	738.0	-	-
Manufacture of basic metals	7690.0	12560.0	2436.7	-	352.0	16800.0
Manufature of computer and other electronic equipment	19937.9	6073.2	4742.0	-	-	-
Manufacture of machinery and equipment	222.8	8241.2	44.2	82.8	-	-

Over the past decade Azerbaijan has built a number of enterprises in the agricultural sector for the industrial production of dairy products and winemaking by European partners, and has also modernized the industrial enterprises in various sectors of the economy - in metallurgy, in engineering and in the railway sector by foreign investment from developed countries. Innovations in industrial production, in the infrastructure of the economy contribute to the development of the national economy of Azerbaijan.

Another area of innovative development is the ability to actively use government marketing policies, marketing strategies and advertising companies to export science-based products and services.

The increase in Internet use in Azerbaijan in recent years has created an important infrastructure for the development of e-commerce. This is due to the fact that Internet has changing towards innovation and their application of new management methods in many business models. Through them, Internet users become an important part of e-commerce. As we know, one of the most important factors for the sustainable development of e-commerce is the number of Internet users in the country. The spread of the Internet alone is not enough for e-commerce to thrive. A strong information infrastructure must be created in the country, the security of

e-commerce must be ensured, and legal regulation mechanisms must be created and applied.

Table 7: SWOT analysis of scientific intensity products of manufacturing field of Azerbaijan

STRENGTHS	WEAKNESSES
➢ manufacturing production increasing last 10 years; ➢ increasing the share of domestic investment in the country's economy; ➢ industrial per capita profit increasing.	➢ decrease of VAT share in GDP; ➢ technological innovations' low expenditures in many manufacturing industries; ➢ approximate decrease in fixed capital investment in engineering industry; ➢ product quality in the processing industry is below international standards.
OPPORTUNITIES	THREATS
➢ industry modernisation (especially opportunities for structural improvement); ➢ export competitiveness increasing in non-oil industry; ➢ high-tech production capacity using; ➢ foreign investors' attracting; ➢ proximity to major regional markets.	➢ existence of organizational difficulties in gaining access to foreign financial markets; ➢ the country's industry lags behind the innovative processes taking place in the world industry.

Starting a business in the field of ICT is the most succesful business. Documentation on market development, ease of access to credit, microfinance conditions, as well as the availability of ICT and creative organisational models provides the large opportunities for Azerbaijan entrepreneurs and stimulates the development of new businesses.

It is of particular importance to choose the right strategy for the sale of ICT services in Azerbaijan and the development of electronic commerce and e-banking systems and the realization of ICT products in foreign markets. These strategies should be based on attracting new customers and retaining old customers in foreign and domestic markets. Development of strategies will ensure the access of ICT products and services of Azerbaijan to foreign markets in the long term.

Marketing strategies are based on 2 main ones - pull and push strategies [21]. Push and pull strategies also are divided into stratification, differentiation, diversification and elimination marketing strategies. Table 8. shows the classification of these strategies.

In differentiated marketing strategy a company can offer a consumer

a new product that is different from its competitors. Through this differentiation, each firm can identify its target customer. Differentiation marketing strategy includes some strategies like as specialization on a certain ratio of quality and price. At the same time, the company should be engaged in the provision of either high-quality geographical specialization. The company provides services in a particular locality or region. Next strategy is the specialization on a certain ratio of quality and price. At the same time, the company should be engaged in the provision of either high-quality or low-cost services.

Table 8: Marketing strategies of İCT sector of Azerbaijan

Push strategies	Pull strategies
Stratification marketing strategies	*Diversification marketing strategies*
➢ Offensive strategy; ➢ Breakthrough strategies; ➢ Innovative development strategy; ➢ Strategies as a pioneer or innovator; ➢ Follower strategies.	➢ Market entry strategy; ➢ Product creation strategy is effective when new products appear; ➢ The market expansion strategy is effective in identifying market areas with acceptable sales demand and revenue generation; ➢ A retention strategy that can maintain its market position.
Differentiation marketing strategies	*Elimination marketing strategies*
➢ End-user specialization; ➢ Vertical specialization; ➢ Specialization depending on the size and importance of customers; ➢ Specialization in individual customer service; ➢ Specialization on a certain ratio of quality and price; ➢ Low-cost services; ➢ Specialization in service; ➢ Public Marketing Strategy.	➢ Retreat strategy; ➢ Focused marketing strategy.

One of differentation strategy branch is a specialization in service. The firm offers one or more unique services that are not provided by its competitors. We also consider the vertical specialization - typical for companies that concentrate their efforts on the provision of certain types of services. Next strategy is a specialization depending on the size and importance of customers Strategy for entering the consumer market. It is recommended to use such a strategy when a company introduces an already known product to the market. A public marketing strategy is a specific cost

advantage. Using this strategy, the company is aimed at a wide target audience.

Let's consider diversification marketing strategies [1-2]. These strategies contribute to improvement of products' and services' positions through various strategic approaches. The product creation strategy is effective when new products appear. This strategy favors traditional sales methods using supportive marketing activities. The market expansion strategy is effective in identifying market areas with acceptable sales demand and revenue generation.. İn this case the company focuses on serving small, medium or large customers. The market expansion strategy is effective in identifying market areas with acceptable sales demand and revenue generation. A retention strategy that can maintain its market position. It is used: with a stable position of the company, with missing opportunities for an offensive strategy, as a result of caution before taking specific actions. A public marketing strategy is a specific cost advantage. Using this strategy, the company is aimed at a wide target audience [1].

A retreat strategy is more often a necessary measure than a determinable one. In this case, the company independently reduces its market share. The rules of this strategy assume a gradual cessation of cases. A focused marketing strategy enables companies to organize opportunities in a single market segment.

Let's consider stratification marketing strategies. The marketing strategy of stratification requires large financial costs, which are necessary for radical and basic innovations that have no analogues in world. Monopolist producers also spend a lot of money on large-scale marketing research and on an advertising company. Due to the fact that the marketing strategy of stratification requires large investments in innovations of a radical nature, it is located in the Strength quadrant of SWOT analysis [1-2]. One of stratification marketing strategy is offensive strategy. It is an active, aggressive position of the company in the market, its goal is to gain and expand market share.

Conclusion

The situation is improving, but the manufacturing industries have not yet improved their position, as there is no system and focus on specific priorities for sustainable economic development. It is advisable to facilitate the transition to an innovative stage of growth and development by attracting investments and qualified personnel that ensure the production of modern and high-tech products to achieve sustainable development of the economy and increase its competitiveness.

The specific weight of both imports and exports of knowledge

economy, hi-tech and creative products is very low, which indicates a low application of both process and product innovations. It is necessary to increase attention to this area.

Any slight increase observed in the import and export of ICT services in general trade can further improve the position of Azerbaijan. The increase and decrease of net FDI flows abroad (weight in GDP, three-year average) have a slight effect on the position of Azerbaijan among the world countries.

During last century science intensive sector of Azerbaijan Economy used to product and process technology innovations. After souverinisation Azerbaijan will use to another innovation changings'implementation methods like as marketing, searching new administrating approaches and new sources for producing products. Marketing method in modernity has using of all information technology applications such as social networks, electronic sites of the state, banks, industrial enterprises, advertising agencies and other institutions.

E-commerce leads not only to the increase of ICT services, but also to the increase of their quality and improvement of their technological characteristics, as well as to the increase in the realization of modern products and services in foreign markets.

In order to actively use innovations in the field of foreign economic relations, taking into account the factors affecting them, the areas with innovative development and high technological capacity, especially in the field of ICT, should be developed.

The ICT sector occupies a special place in Azerbaijan's import-export operations and has a positive effect on Azerbaijan's GDP evaluation indicators. Another direction of innovative development is the ability to actively use the state marketing policy, marketing strategies and advertising companies of science-intensive products and services exported abroad.

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