

REGIONAL SMALL AND MEDIUM ENTERPRISES IN THE CHEMICAL AND PETROCHEMICAL INDUSTRY OF THE REPUBLIC OF KAZAKHSTAN

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ABSTRACT

The paper examines the determinants of creation of SME in chemical and petrochemical branch. Creation of SME in this branch It will increase employment, GDP, GNP and improved economic situation in regions. Chemical and petrochemical industry gives the chance of creation of the full-fledged chains added costs, and also has the high export potential. For development of priority sectors will create favorable economic, infrastructure and institutional conditions. The study uses analysis and method of comparison of data from Agency of statistics of Kazakhstan of SME and large enterprises in petrochemical cluster in Atyrau region. Also method of prognosis of quantity of SME in caustic soda in 2020 in petrochemical cluster was used. Findings the work demonstrates that SME have more availabilities than large enterprises in production chemical products and petrochemical products in petrochemical cluster. Also was made prognosis of quantity of SME in petrochemical cluster for caustic soda in Kazakhstan in 2020 year. Also that there were founded 5 measures which will help in solving problems in petrochemical cluster: branch regulation, internationalization, technologies and innovations, financial resources, human resources. Also in this article provides overview of theory concerning the cluster theory as a one of main methods for increasing competitiveness.

KEY WORDS

SME (small and medium enterprises), techno park, cluster, chemical industry, petrochemical industry, employment, corporate income tax.

Research type – view point.

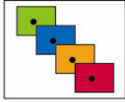
JEL classification: O31, R11, R12

Introduction

SME are important engine of economic growth of any state. Without further development of small and medium scale enterprises effective functioning of economy of any state is not impossible. It effectively influences for employment, gross regional product. The petrochemical and chemical industry is very young, since 2008 it was allocated in a separate industry according to the President's epistle Republic of Kazakhstan. Therefore forming of small and medium scale enterprises in this industry will be gradual and step-by-step.

Small Medium Enterprises

Small and medium-sized enterprises (SMEs) are often referred to as the backbone of the European economy, providing a potential source for jobs and economic growth. SMEs are defined by the European Commission as having less than 250 persons employed. They should also have an annual turnover of up to EUR 50 million, or a balance sheet total of no more than EUR 43 million (Commission Recommendation of 6 May 2003). These definitions are important when assessing which enterprises may benefit from EU funding programs aimed at promoting SMEs, as well as in relation to certain policies such as SME-specific competition rules. European Commission policy in relation to SMEs is mainly concentrated in five priority areas, covering: the promotion of entrepreneurship and skills; the improvement of SMEs' access to markets; cutting red tape; the improvement of SMEs' growth potential, and strengthening dialogue and consultation with SME stakeholders. A special SME envoy has been set up in the European Commission Directorate-General for Enterprise and Industry with the objective of better integrating the SME dimension into EU policies. Annual structural business statistics with a breakdown by size-class are the main source of data for an analysis of SMEs. A limited set of the standard SBS (small business standards) variables (number of enterprises, turnover, persons employed, value added, etc.) is available mostly down to the 3-digit (group) level of the activity classification (NACE)-(National Association of Catering Executives), based on criteria that relate to the number of persons employed in each enterprise. The number of size-classes available varies according to the activity under consideration. However, the main classes used for presenting the results are: microenterprises: with less than 10 persons employed; small enterprises: with 10-49 persons employed; medium-sized enterprises: with 50-249 persons employed; small and medium sized enterprises (SMEs): with 1-249 persons employed; large enterprises: with 250 or more persons employed. In EU SME represent 99% of all enterprises they employed 90 million people and generate 3,7



tn. in added value while providing 2 out of 3 jobs and contributing to entrepreneurship and innovations (European Union 2015).

SME in Kazakhstan

In Kazakhstan, small enterprises are individual entrepreneurs without formation of legal entity and legal entities performing a private entrepreneurship with an annual average number of workers no more than 50 people and the annual average income less than 300 average monthly index- \$1899402 dollars-fold monthly settlement indicator established by Entrepreneur codex 2016 and republican budget and operating for January 1 of the corresponding financial year. Subjects of an average entrepreneurship are individual entrepreneurs without formation of legal entity and the legal entities performing a private entrepreneurship, not belonging to subjects of a small and large entrepreneurship, but sometimes it is used in branches and employees between 101 and 250, annual average income equal or more than 300 average monthly index-\$ 1899402 dollars. Subjects of a large entrepreneurship are individual entrepreneurs without formation of legal entity and the legal entities performing a private entrepreneurship and answering to one or two of the following criteria: the annual average number of workers more than 250 people and (or) the annual average income over 300 average monthly index-1899402 dollars-fold monthly settlement indicator established by the law on the republican budget and operating for January 1 of the corresponding financial year. Generally, 2015 was not an easy year for the economy of Kazakhstan, which also affected the development of the SME sector in the country. The specific feature of the development SME sector in Kazakhstan is its dependence on imports and, therefore, sensitivity to the exchange rate fluctuations and prices to oil. In the report of Fund of Development Damu said that 2015 year was a year of Kazakhstan's transition to a floating exchange rate policy and as a result devaluation of the national currency reached 100% in 2015.

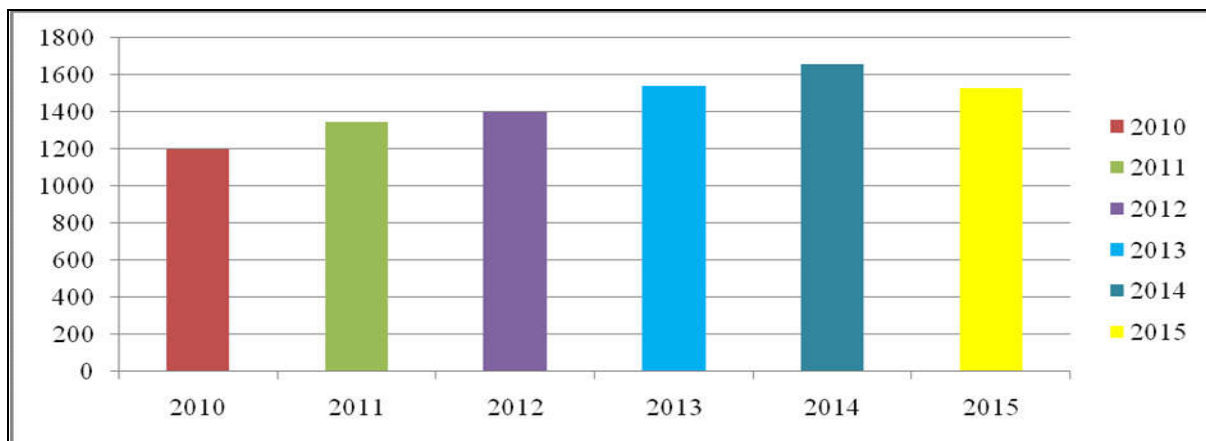
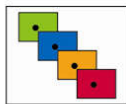


Figure1. Number of registered SMEs in Kazakhstan from 2010-2015

Source: (e.g according to Data from Fund of Development Damu for 2015 year p.14)

Under the influence of these factors the SMEs sector growth rate slowed down but positive dynamics for key indicators remained in the sector. Despite reduction in the number of registered SMEs in 2015, indicators of the sector's contribution to the economic development continue to grow. Employment in the sector has grown, and reached 36, 5%; production output of the SME companies increased in 2015 by 9% compared to last year. This suggests that there are positive qualitative changes in the SME sector. In 2015 the number of registered SMEs in Kazakhstan has dropped to 1530 thousands, that make 92, 4% from the previous year's figure. Fund assessment the share of SMEs in the total number of business entities in the country increased and reached 96, 2% in 2015. Analysis of employment index in the SMEs describes the growing significance of Kazakhstan's entrepreneurship in solving problem of employment. Percentage of the population actively employed in SMEs as on 01.01.2016 was 36,5% of the total employment in the economy. The dynamics of this indicator for the period from 2010 to 2015 has an overall upward trend: the share of population actively involved in SMEs has increased by 4,1% points. In absolute terms, over past 6 years by 516 thousand more people found employment in the SME sector. Only in 2015 employment in the SME sector increased by 377 thousand people. As a result, on 01.01.2016, the number of jobs reached 3147 thousand people. Production output by operating SMEs, in absolute figures, growing every year. The production dynamics is smoother in 2015 after adjusting the parameters of SMEs production output and the share of SMEs in GDP in 2014 as a result of changes in the categories of private entrepreneurs in the Kazakhstan legislation. The SMEs production output increased by 102% in real terms, however, the share of SMEs in GDP decreased by 0,6% percentage points to 25,6%. During 2015, against a decline in CIT -(corporate income tax)- payments from large and medium sized enterprises, the amount of revenues from small business have grown, reaching 409 billion KZT (tenge). Thus small enterprises have demonstrated a steady increase in CIT payment for the past 6 years: in 2015, compared to 2010, CIT payments of small business increased by 149% and their share in total revenues from CIT -(corporate income tax)- by 15 percentage points.



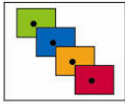
Petrochemical industry in world

The petrochemical industry is an important part of the world industry. According to the data Transparency Market Research in 2011 the market of petrochemical products constituted 472 billion US dollars or 434 million tons and will reach the level of 791 billion US dollars by 2018 or 627 million tons in case of annual average growth rate of 5,4% . The largest developed economies of the world traditionally have large chemical complexes in their territories. Nine of ten largest economies of the world on GDP amount, except for the Russian Federation, plus South Korea, enter ten the largest producers of chemical products. A general characteristic for the countries of producers is availability capacious internal (the USA, China, Japan, India) or the regional market (Germany, France, Great Britain, Italy in the EU and South Korea). The petrochemical industry has significant effect on allied industries. The petrochemical industry consumes over a third of all world production of hydrocarbonic raw materials, being one of key consumers of a gas and oil producing complex. According to forecasts, by 2030 the share of hydrocarbonic raw materials for needs of petrochemistry will constitute about 36%. The first place of volume of sales is Europe, and Africa countries have the last place of volume across the world in petrochemical products. The countries rich with hydrocarbonic raw materials will receive additional competitive advantages in development of a petrochemical industry on to base of stable access to raw materials at the prices below the market. It will push them to integration on the chain added forward costs. Those countries, whose companies already enabled the realization large-capacity projects, will develop the following repartitions special products of petrochemistry. The best example of such strategy is Saudi Arabia. Controlled for 70%the state the SABIC Company was included into the five of the largest petrochemical companies of the world. At figure 1 we can see the top large chemical companies in the world.

Petrochemical industry in Kazakhstan

The Atyrau region is the leader in oil extraction amounts in Kazakhstan with amount of annual production near 32,1mln.tonn. In area there are two large-scale oil and gas deposits – Tengiz and Kashagan. The industry of the Atyrau region has pronounced commodity dependence. The share of a gas and oil producing industry in structure of industrial production constitutes 91%. Considering that the Kashagan field will be in the short term entered, the role of an oil-and-gas sector considerably will increase. The industry of area is created by 14 large and 34 averages enterprises scales to which share 98% of total amount of the made industrial output fall. The specific weight of area in republican commodity production makes about 25%. At the same time the mining industry gives 90,8% of all amount of industrial output. 11,8% of industrial output fall to the share of processing industry. In the area there are opportunities for development of the petrochemical industry. On a complex on production of aromatic hydrocarbons of the Atyrau oil refinery in 2015 release of oil and a paraxylol is begun. The project worth \$1,1 billion is implemented within upgrade of the plant and for 94% is financed by Development Bank of Kazakhstan. The planned annual amount of products in case of an exit to design capacity will make 496 thousand tons of a paraxylol and 133 thousand tons of oil. In the territory of Atyrau area 4 engineering companies function: Atyrauoilmach LLP, Karashungil LLP, Dossormunaymach LLP and Kazturborepair LLP. And 2 companies which extract oil: Tegizshevroil Limited liability Company and Maten Petroleum Joint Stock Company.

Theoretical background of research is based on previous results of cluster development in Kazakhstan. (Clusters in Kazakhstan Yespayev & Kireyeva, 2013). Theoretical background of the given research is based on meta-analysis and especially on the works M.Porter (Porter, M. (2000). Location, competition and economic development: Local clusters in the global economy. *Economic Development Quarterly*, 14(1), 15-31. Porter asserts that clusters have the potential to affect competition in three ways: by increasing the productivity of the companies in the cluster, by driving innovation in the field, and by stimulating new business in the field. In summary the business cluster is a geographical location where resources and competencies reach a critical threshold that gives the region a key position in a given economic branch of activity and a decisive, sustainable competitive advantage over other places-or even world supremacy in that field. The research is based on previous results of analysis works of (Adams et al. 2012; Forsman 2008 and Raju et al.2011) provide a good account of SME compared with large organizations. They have more flexibility than large companies. Also theoretical backgrounds were made at research studies that provide insights into specific place-industry cases (De Propriis and Hypponen, 2008; Florida and Mellander 2008; Tschang and Vang 2008; Campbell-Kelly et al. 2010; Lazzarotti et al.2011) and these have provided rich and invaluable evidence. What research there is that covers both multiple places and industries in fact only encompasses a few countries (e.g., Lazzarotti et al 2008; Boix et al.2012), or focuses on an excessively aggregated scale such as at the level of the region (e.g.2010 and Nielsen 2010). The analysis of researches of foreign and domestic scientists in the field of a small entrepreneurship specifies that this problem is actively developed. Fundamental aspects of the theory of an entrepreneurship and its immanent the constituting small business were considered in works of the famous foreign scientists: R. Kantilyona, A. Tyurgo, F. Ken, A. Smith, Zh. B. Seius, J. Schumpeter, F. Hayek, K. Makkonell, to L. Br, P. Drukera, etc. There are 2 economical scientists in England who made researches in petrochemical branch: by Lampadarios (2015) and Hornke (2012). Hornke (2012) developed 5 criteria factors for good functioning chemical and petrochemical branch in England: employee and employee qualification, enlargement, diversification, specialization on portfolio, enhancement of services, forecasting on specific regions, expansion to international sales.



Creation of petrochemical cluster as main factor of development SME in regions of Kazakhstan

The purposes of the National cluster on production and oil refining and gas, oil and gas chemistry, the related mechanical engineering and services for the oil and gas industry are:

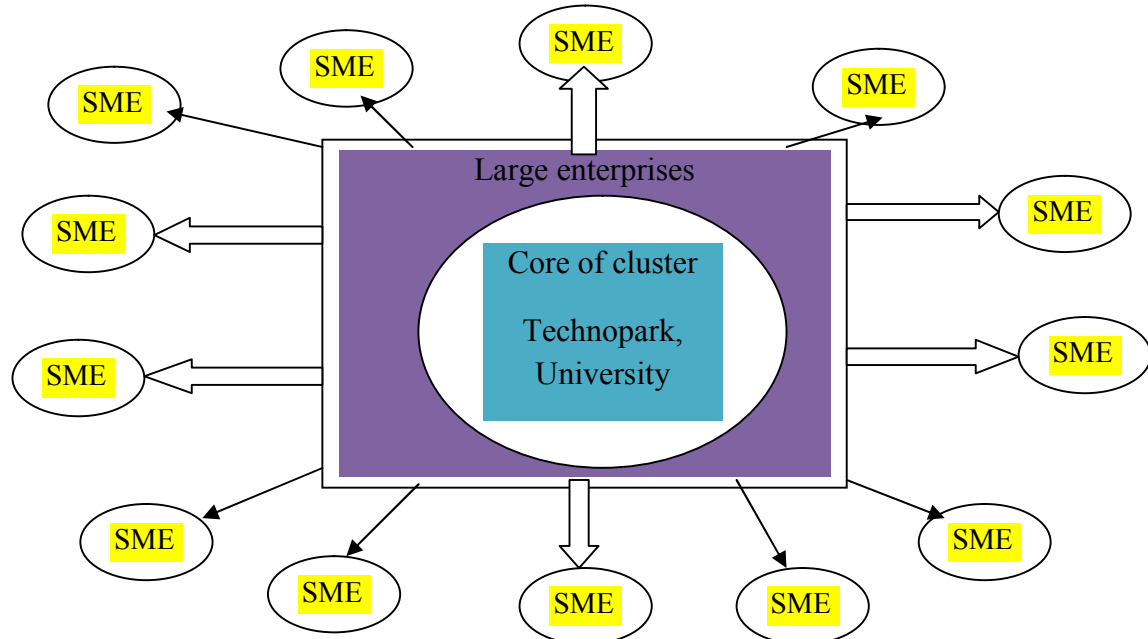


Figure 2. Scheme of petrochemical cluster
Source: (made by author)

In this figure we can see that SME have link with large enterprises. For example large enterprises will extract and transit oil. And small enterprises will make products from converted oil. In this field we can create SME. For example we can make SME for producing plastic, bathrooms, spare parts for cars etc.

Forming in the west of Kazakhstan dynamically developing National cluster specializing in production and conversion of mineral raw materials (oil and gas) and using benefits of an oil-and-gas sector to development and diversification of the industry and service trade of the region, increase in competitiveness and strengthening of economic capacity of the region; Creation of bases of the new economic model of Kazakhstan which is based on an achievement of science and technology and innovative spirit of an entrepreneurship and capable to adapt to external shocks and changes of conditions in world economy; Creation of qualitatively new innovative productions integrated into the international production systems and improving position of the country in the international separation work; Preserving existing and creation of the new workplaces providing worthy employment for the region population; High-quality ensuring the academic and professional education; Providing the rational ratio of amounts of production and conversion of hydro carbonic resources promoting overcoming commodity dependence of national economy; Improvement of internal and external prestige of the region. Also the good possibilities creation in this cluster many small and medium enterprises.

Technopark as main link in core of cluster and SME in petrochemical industry

The core of cluster will be technopark and University. Now government creates the Techno Park in Atyrau region. The National industrial petrochemical science and technology park and the Aksay industrial park functioning in the territory of the region which shortly will become the centers of gravity of new innovative and high technology productions can become a kernel of the National cluster and will give an additional impulse of development of the National cluster. The tasks of the technopark are: materials and release of a wide range of competitive petrochemical products with a high value added; investment attraction in a construction and complex development of petrochemical productions, including on the basis of mechanisms of public-private partnership; integration of the Kazakhstan petrochemical industry into a world production system; creation of national system of the research organizations for creation and enhancement of petrochemical productions and technologies for cleaning, deep conversion of hydro carbonic raw materials; preparation and retraining of specialists for petrochemical productions according to international standards.

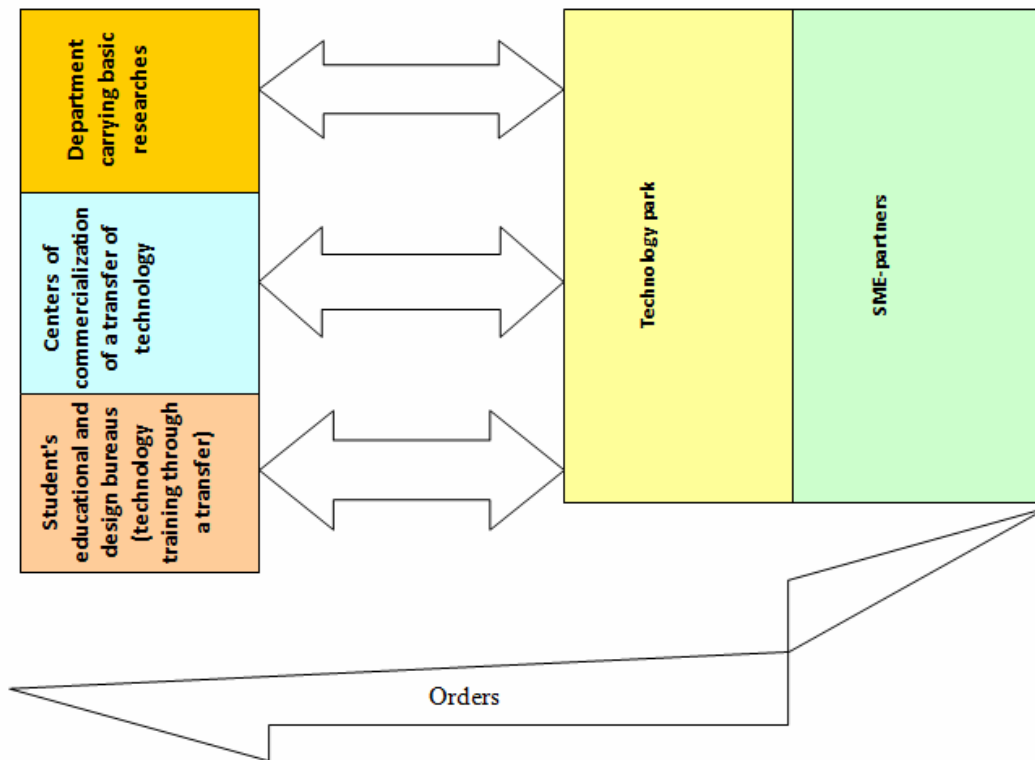
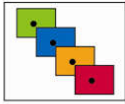
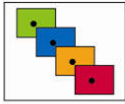


Figure 3 .Link between universities technopark and SME in petrochemical branch

Source: (e.g according the thesis for a scientific degree PhD Econ. On special. 08.00.05 Science and technology parks of Central Europe of P.68/ Prikazchikova E./Moscow, 2005)

Within National industrial petrochemical science and Technology Park measures of the state support are provided to the companies, attractive conditions for direct investments in a construction of the overworking, export-oriented high technology productions are created. Priority types of activity on territory national industrial petrochemical science and Technology Park are: the construction and operation of complexes, productions and world-class installations for deep conversion of hydrocarbonic raw materials including development stages of business plans, feasibility statements, the design estimates construction and balancing and commissioning for ensuring production Kazakhstan basic and with a high value added of petrochemical products, including reagents for a gas and oil producing industry; forming of modern high-tech infrastructure for ensuring effective activities of petrochemical productions; development and implementation of marketing, research, scientific and technical projects and carrying out technical and economic, developmental works on creation and development of new innovative petrochemical productions and technologies; preparation and retraining of specialists of a technical profile for a petrochemical industry according to international standards. Potential participants of industrial petrochemical science and Techno Park are among as production enterprises on profound conversion of hydrocarbonic raw materials and release of basic large-capacity petrochemical products, and the entity on further conversion of basic petrochemistry in products with a high value added. In the area there is the Atyrau institute of oil and gas – specialized technical college on training of specialists for an oil and gas industry. It is also the center of scientific research for urgent problems in the field of geology and geophysics, technology of drilling and development of wells, to development and operation of oil and gas fields, preparation and oil transportation and gas, conversion, mechanical engineering, power, information technology and ecology. For high-quality conducting development research and educational process at institute there was created necessary laboratory base: 3 scientific laboratories on fundamental applied researches, 5 scientific centers, more than 50 types of the educational laboratory equipment for implementation of educational programs for specialties of higher education institution. Distance training and online education systems develops. The Atyrau institute of oil and gas conducts work on strengthening of communication with industrial enterprises of the Atyrau region. Students pass an obligatory work practice at the entities of area.

Also is very important is creation of link between techno park and small and medium enterprises and university. Such link will help to make balance between labor market and market of educational market. And also will help to make innovations and inculcate these innovations to production of petrochemical industry according to figure 3.



Research methodology

Also were used methods of analyze, syntheses, prognosis of quantity of SME in petrochemical industry. At first were used methods of analyze and comparison of data large and SME in petrochemical industry. It is showed some opportunities for SME for production chemical products. Then were used methods of prognosis of quantity of SME in petrochemical industry in caustic soda.

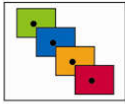
Data

There are some opportunities to create this cluster and SME in this region. According to statistical data from Agency of statistics of Republic of Kazakhstan –Table 1. The goal of research to show production capabilities of small enterprises depend on those places which the big companies leave empty, and small see in them an opportunity to achieve the greatest profitability. According to this table we can see that small enterprises have opportunity to produce chemical products. And large will extract and transit oil. Achievement of purpose creation of cluster requires the decision next complex task: Improvement of an economic environment for business activity. Successful functioning of a cluster requires availability of fixed monitoring, the analysis and forecast of the fundamental indicators characterizing economic conditions of conducting business activity, assessment of level of availability to entrepreneurs of economic factors, the elimination barriers to development of an entrepreneurship. It is also necessary to carry out work on implementation of the principles and rules of the WTO, in particular, when importing and exporting products by participants of a cluster. To minimize the expenses connected with customs and border control and also a negative impact of economic integration in EEU, in particular, the unfair competition. It is important to enhance operating conditions of the financial market. It is necessary to increase availability of credit resources to implementation of new projects and replenishment of turnover resources of enterprises, enlarge the horizon crediting and having lowered a crediting rate to the level, acceptable for entrepreneurs, to create system of insurance and credit, export of investments. In the region the network of the transport logistic centers connected single the multimodal system, promoting decrease the common transport costs of participants of a cluster and their partners shall be created.

Table 1.Amount of register SME in Atyrau region RK for 1 January 2016 y.

	Total	Government	Private total	With government share	Without government share Joint enterprises	Foreign companies
Industry						
Total	639	11	575	-	52	53
Small enterprises	601	9	545		46	47
Average enterprises	19	1	15		2	3
Large enterprises	19	1	15		4	3
Cultivation of oil						
Total	29	-	21	-	3	8
Small enterprises	20	-	15	-	-	5
Average enterprises	5	-	3	-	1	2
Large enterprises	4	-	3	-	2	1
Production of chemical products						
Total	23	1	22	-	2	-
Small enterprises	21	1	20	-	1	-
Average enterprises	2	-	2	-	1	-
Large enterprises	-	-	-	-	-	-

Source: (e.g according to www.stat.gov.kz)



The expected results from strategy implementation of the National cluster: For assessment of activities of the National cluster it is necessary to develop and implement system of monitoring and assessment of implementation of the Road map and goal achievement of Strategy. Regular monitoring will allow to reveal and fix the problems connected with changes of conditions and to quickly enter necessary changes into current plans and actions for development of the National cluster. In general, the expected positive effect from the National cluster: creation of conditions for sustainable development of economy and social sphere of a region in general countries; forming of “critical mass” of the modernized, innovative, high-technology competition; improvement of a business climate of the region for attraction of investment and development of an entrepreneurship; integration of the companies of the region – participants of the National cluster in process international job specializations by ensuring their active participation in foreign economic activity. Participants of the National cluster will gain synergy economic effect in the form of performance improvement of work, decrease in product cost. Besides, regional specialization and competence of participants of business will increase, there will be a technological upgrade of the operating productions, the amount of the processed export of the region will increase, and share of a private sector in the sphere of production of goods will increase. All this will lead to growth of competitiveness of the western region and country in general.

Methods

The methods used in this research are aimed to provide analysis the process of creation cluster in Atyrau region. The study involves the use of general economic indicators, analysis methods of development of chemical and petrochemical industry in Kazakhstan, to determine its economic profile of development of Atyrau region. In accordance with diverse backgrounds to study the process of innovative development of regions were used certain methodological approaches (Balabanova, 2009; Koshkarov, 2012). Also were used methods of calculation, prognosis of data which can be created in petrochemical industry.

Products which can receive from oil and produce SME are vary variable: tape film and sheets tapes adhesive tapes, baths, showers, sinks, tableware and kitchenware, polyethylene bags etc. Kazakhstan can produce these products to China. It is the largest importer of these products. Also the most imported good for China for import is caustic soda. The product which can produce SME in Kazakhstan is caustic soda. Consider figure 4 we can calculate approximate amount of SME needed to produce caustic soda. For example capacity will be 90000 thousand tons divide at amount number workers of this production.

For example it will be about 8 thousands specialist who can work there it would be proportion 80000000-8000 specialists and in 2020 it would be 90000000-x

$$x=80000000-8000$$

$$90000000-x$$

$$x=9000 \text{ specialists will be needed in 2020 for caustic soda.}$$

It is mean that the increased amount of specialists in caustic soda. These 9000 specialists will create new job places and create middle and medium enterprises. For example it would be about 9000 specialists. And 9000/100, 100- is the average number of amount people referred to SME. It would be 90 SME we can create it this sphere according to figure 4.

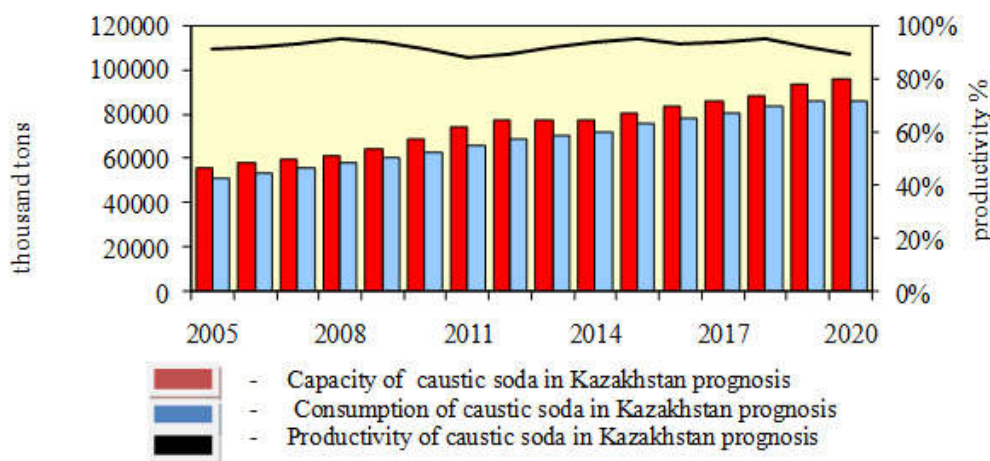
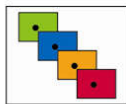


Figure 4. Production and consumption of caustic soda in Kazakhstan
Source- (according to Plan of chemical and petrochemical industry of Kazakhstan 2012 P.25).

Also from this picture we can see that if increased the output of caustic soda then will increase number of SME in petrochemical industry. Good correlation between output of caustic soda and nuber of SME in this industry.



Research results and findings

In article it is showed how we can create new SME in chemical and petrochemical industry in Kazakhstan. These SME can be created in petrochemical cluster in Kazakhstan. In this cluster are good opportunities to create these SME which will be work with large petrochemical enterprises in Kazakhstan. Also we can use experience of Singapore to create this cluster and SME in chemical and petrochemical industry. The most important measures for development SME in petrochemical cluster are identified: branch regulation, internationalization, technologies, innovations, financial resources, human resources. But also such as in all industries there problems and petrochemical industry has also problems.

Key problems of a chemical and petrochemical industry for SME of Kazakhstan

Key problems of a chemical and petrochemical industry for SME of RK are:

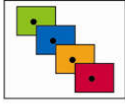
- Insufficient level of development of infrastructure;
- Low availability and high cost of financial resources;
- High cost of an industrial construction;
- Deficit of qualified personnel;
- Remoteness from the target markets of sale;
- Backwardness of government regulation of an industry.

Solution for these problems –using Singapore experience in creation measures for SME in a chemical and petrochemical industry of Kazakhstan.

Table 2. Foreign experience in creation measures for SME in chemical and petrochemical industry

Singapore				
Branch regulation	Internationalization	Technologies and innovations	Financial resources	Human resources
The state created monitoring body – Council of economic development of Singapore – coordinating actions of participants of an industry. A task of Council – creation conditions for involvement of local and foreign investors, and also close coordination of efforts with other government organizations. The tax legislation provides privileges – 17% a tax on the income of large corporations, release for several years for startups and small enterprises, preferential land lease to residents for 30 years and connection to networks, logistics, treatment facilities and other services (Jurong Town Corporation - JTC).	It was created infrastructure for development of a cluster, the state attracted the foreign petrochemical companies which as a result invested 35 billion US dollars in a construction of additional specialized infrastructure and developed production. Today on the island more than 100 foreign companies work with an annual turnover in 70 billion US dollars, including: ExxonMobil, Bayer, Toshiba Chemical Corporation, Mitsubishi Chemical, Chevron Phillips, Shell Chemicals, Sumitomo Chemicals and others.	Involvement of the foreign companies allowed the government of Singapore to resolve an issue of a transfer of knowledge and technologies – Researches and Development the centers of world petrochemical corporations were transferred to a cluster. In addition, the state performs direct investments in science for development of further repartitions – the special chemistry used in pharmaceutics, cosmetology, etc. So, under control of the state the largest research associations, and the most known Biopolis, the Scientific park of Singapore (Singapore Science Park), the Biomedical Tuas Park (Tuas Biomedical Park) were created. In Biopolis creation the government invested more than 580 million US dollars.	The state of Singapore invested about 10 billion US dollars in creation of the island and its general infrastructure. Also the venture fund for development of technologies of 12 billion US dollars in size was created. The size of the funds allocated for Research and Development today constitutes more than 2% of GDP that means their tenfold growth since the beginning of the 90th years.	Besides involvement of foreign experts, the government of Singapore pays much attention to development of own qualified personnel – on the island Dzhurong the Center of chemical CPTC technology (Chemical Process Technology Centre) was created. Where 800 students and 8000 workers for chemical and pharmaceutical industry studied. In Singapore branches of the known universities are also open: already branches of the Chicago university, Stanford, university of John Hopkins and Massachusetts Institute of Technology work. As additional measures, compensation to residents to 30% for training is provided.

Source: (e.g according to Development strategy of petrochemical branch of the Republic of Kazakhstan 2016 P.23)



CONCLUSIONS

Complexity of the nature of small enterprises is established. So production capabilities of small enterprises depend on those places which the big companies leave empty, and small see in them an opportunity to achieve the greatest profitability. And small enterprises and medium scale enterprises doesn't act as what – that isolated from a general economic system, they is its organic and integral part. They promote formation of the new social and economic environment and at the same time is its product. Small and medium scale enterprises integrally join in economic structure, in a competitive environment, in public separation of other forms of an entrepreneurship - large, national, and also transnational. It is impossible to deny that small and medium scale enterprises render on economic behavior of major companies. It is expressed in the following: First, large enterprises, making use of experience of small firms, structure the divisions for benefit of small and average; Secondly, they relying on experience of small and medium scale enterprises provide to the divisions big freedom in the choice and adoption of tactical decisions; Thirdly they have an aspiration to a mutual cooperation - a cluster form of the organization.

RECOMMENDATIONS

The conducted research showed forming of small and medium scale enterprises in a petrochemical cluster: economic function of sector of small and medium scale enterprises consists in its contribution to production of GDP, influence on structure of economy and creation of a competitive environment; small and medium scale enterprises need cooperation with large and it is possible in a cluster form of production organization. All this is necessary to take the place in a chain of production, value added. And the state needs to promote and in every possible way to encourage similar interaction.

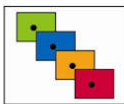
REFERENCES

Books and articles:

- Balabanova, E. A. (2009). Methodical approaches to analysis and assessment of the level of socio-economic development of municipalities in the system of strategic planning. *Izvestia ISEA*, Vol.4.144-146 p.
- Bergman EM, Feser EJ (1999) *Industrial and regional clusters: Concepts and comparative analysis*. West Virginia university Press, Morgantown, WV.
- Cass, Ian. Its hard being young. *Chemistry & Industry*. Aug.2015, Vol. 79 Issue 8, 4-5p.
- Evripidis Lampadariou *Critical challenges for SMEs in the UK chemical distribution industry*. Journal of Business Chemistry 2016, 13 (1).17-18 p.
- Gordon IR, McCann P (2000) Industrial clusters: Complexes, agglomeration and/or social Networks? *Urban Studies* Vol.37№3.513-532p.
- Jacquez GM (2008) *Spatial cluster analysis*. In: Wilson JP, Fotheringham AS (eds.). The handbook of geographic information science. Blackwell Publishing, Oxford 652p.
- Porter, M.E.(1990). *The competitive advantage of nations*. New York: The Free Press 875p.
- Porter, M. (2000). *Location, competition and economic development: Local clusters in the global economy*. Economic Development Quarterly, 14(1).15-31 p.
- Prikazchikova E. Thesis for a scientific degree competition PhD Econ. on special. 08.00.05, Moscow, 2005, *Science and technology parks of Central Europe*.68 p.
- Rafael Boix, Jose Luis Hervas-Oliver, Blanca De Miguel-Molina. *Micro-geographies of creative industries clusters in Europe: From hot spots to assemblages*. Papers in Regional Science. Nov2015, Vol. 94 Issue 4, 753-772.p.
- Susan A.Elkins, Robert R.Bell, Lillian Hartgrave, Sally Pardue *Industry Cluster Pathways: A focused Approach to Regional Workforce Development*. *SAM Advanced Management Journal* (07497075). Winter2016, Vol. 81 Issue 1, 20-33p.
- Thisse JF(eds.). *Handbook of regional and urban economics*. Elsevier, Amsterdam 1082p.
- Titze M, Brachert M, Kubis A.(2011). The identification of regional industrial clusters using qualitative input-output analysis (QIOA). *Regional Studies* Vol.45 issue 1.89-102 p.
- Vom Hofe R, Chen K (2006) *Whither or not industrial cluster: Conclusions or confusions?* The Industrial Geographer 4(1).2-28p.
- Yespayev, S. S. (2014). Priorities, Mechanisms and Prospects on Industrial Clusters and Spatial Economic Zones. *Journal of Asian Finance, Economics and Business* Vol.1№2. 15-24p.

Legal documents:

Development of chemical and petrochemical techno parks in Kazakhstan. (September 2016). Joint Chemical Company of Government of Republic of Kazakhstan PPT. 5-6 p.



Development strategy of petrochemical branch of the Republic of Kazakhstan 201.23 p.

Master development plan for chemical industry of Kazakhstan 2012: Stage 3,30 p.

Report of Fund of Development Damu for 2015 year.45 p.

Strategy of development of petrochemical branch in Kazakhstan Joint Chemical Company of Government of Republic of Kazakhstan 2016 PPT. 26-27p.

Internet sites:

Entrepreneur codex of Kazakhstan - [on-line] Available on - URL:

<http://online.zakon.kz/Document/?doc_id=36652795&doc_id2=38259854#pos>

For development petrochemical branch - [on-line] Available on - URL: <file:///C:/Users/админ/AppData/Local/Temp1_ЦИК%20НГХ%20в%20Р.zip>

[on-line] Available on - URL: www.stat.gov.kz.

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