SIE 2015
6th International Symposium on Industrial Engineering
24th-25th September 2015
FACULTY OF MECHANICAL ENGINEERING
STEINBEIS ADVANCED RISK TECHNOLOGIES
INNOVATION CENTER FME

THE ROLE OF PRIVATE SECTOR IN INDUSTRIES BASED ON IRON AND STEEL PRODUCTS
A CASE STUDY: STEEL ANGLES & FLATS FACTORY

Jamal Mohamed Ben Sasi[1] , Ramadan Ahmed Abugeddida[1]
[1]Faculty of Engineering , Misurata University, Libya

Abstract. Iron and steel industry of the modern industries that met with great demand during the past few years to become the most advanced industrial countries are looking serious and down the monopoly of the industry's products. The private sector plays an important role in achieving economic development and advancing the technical development in different countries, where a large proportion of industrial projects and services, and thus contribute to the creation of employment opportunities for large numbers of the workforce and reduce the increasing rates of unemployment. This paper represents one of the attempts to explain the importance of the private sector in general in the economic life and its place in social life, as well as how to activate the role of the private sector in economic development, and in particular the experience of the private sector in the development of one of the local factories based on products of Libyan Iron and Steel Co., Misurata - Libya, which represents a model for local complementary industries for the production of iron angles and flats. Ensure on the important of privatization and customization, where many studies indicated to adopt some of the countries in the world promote the development of the private sector and give it more support in terms of finance and tax treatment, and touched the search to the contribution of the private sector in the development, implementation and funding criteria for national skills for the purpose of training and rehabilitation. As limiting the administrative problems and obstacles, technical and marketing of the plant referred to previously and the mechanism used to address them, and the extent of support and overcome the legal and administrative procedures as well as financial by the relevant authorities. Finally, conclusions.
Keywords: privatization, industry, steel.

INTRODUCTION

In recent years the economic development projects and social development are a major shift in the degree of economic change and sustained quick growth to human capital will lead the development processes. This means the economic progress cannot be achieved without the availability of qualified manpower and specialized workers. They can carry out the planning and implementation of development programs of economic system. The sectors of economic development need engineers, technologists and technicians, that they have the necessary setup required education, training and experience in various areas of development [1]

The development of small enterprises tries to encourage the residence of the most important part of economic processes in social and developing countries. Also it is .essential to increase the capacity of production, contribute in solving the problems and unemployment. Therefore, many countries has increased the interest rate in projects, provided assistance in various methods and in accordance with available possibilities [2]

The private sector includes economic activities based on private property ownership, whether individual or collective ownership. Considering that the private sector is a key partner to the public sector in achieving the development process. The Arab Organization for Industrial Development and Mining permits organization within the new orientations to be involved in all phases of the organization's activity.[3] Based on the above, the paper focused on the obstacles faced in the private sector management, and precisely related to the industrial, economic problems and limit technical development.

OBJECTIVE OF THE PAPER

- Clarify the experience of the private sector in the development of one of the local factories based on the products of Libyan Iron and Steel

Company(LISCO), which represents a model of steel angles and flats industry.

- Detect the most important problems of the private sector, and delay its development, especially the economical, technical and industrial constraints.
- Find out solutions and suggestions, providing some of the procedures and mechanisms to clear up the most important obstacles that effect on the private sector management.

PRIVATIZATION

Acquires of privatization or customization of the most interesting countries in the world, whether developed all of which gives economic labels in English or French for privatization. There is no concept of the word privatization, which varies from one place to another and from one country to another. It is the philosophy of modern economic related strategy, which can convert a large number of economic, service and social sectors from the public sector to the private sector. Privatization is usually as a tool to activate the improvement economical comprehensive program with several axes pointed at improving economic conditions in any country. The importance of The small enterprises (SMEs) and their role in national economic development is to support of the national economy , support the development of the economy , increase the production, provide economic success, and the important highpoints of economic as the following [4]:

- Generate income for the owners of these establishments.
- Provide employment opportunities for labor and thus work to reduce unemployment and shortage rates.
- Production of goods and export opportunities leading to access to foreign exchange.
- Create value-added products and national capital.
- Give opportunities for other investments of facilities.
- Establish infrastructures for the national economy in the face of obstacles and negative effects such as inflation.
- The small enterprises provide economic system and social stability.
- These facilities play a role in raising the people's participation in the national economy.
- The provision of opportunities for citizens to get income helps citizens in access to food, health, education services, to eliminate the displaced groups, so create a more stable society.

GENERAL CHARACTERISTICS OF SMALL PROJECTS AND ENTERPRISES

In spite of relative small size of small projects, they have certain characteristics different from the rest of other projects; we can mention some of them:

- Direct supervision by the owner of the project: As the project management which done by the owner personally. Therefore, the project management and flexible decisions both of them can be ensured the success of the project.
- Easy to adjust the needed production: Where customer favorites are taken into account, characterized by rapidly changing in production line and taking into considerations the needs of the market.
- Accuracy and good quality of the production due to the approval of specialization in the production of certain products, which means higher skill factor, and increase productivity.
- Can be established in small spaces due to lack of production facilities.
- The Contribution of raising the standard of existing and meet the basic needs of various sectors of culture.
- The degree of risk in the small projects is not high .

THE ROLE OF SMALL PROJECTS IN CREATING JOBS FOR LIBYANS

The importance of small projects in Libya as it provides fertile ground to encourage domestic savings, where these projects are characterized by low capital required for investment when compared to large projects, and they are often used domestic savings, and usually have an administration structure is simple, including accounting methods , and arises from the literal roots. It is not necessarily to use complex technologies and machinery, making it more attractive to small savers who do not tend to forms of participation that deprive them of direct supervision and management of their investments. And what could be the most prominent of these projects contribute to the development programs in Libya, is that they all can contribute to the way in reforming and restructuring the financing industry to provide significant employment opportunities and variety to the Libyans and the mobilization of individual savings and achieving justice in spatial development**.**

PROMOTION AND DEVELOPMENT OF THE PRIVATE SECTOR

Some countries of the world decided to fix the knowledge of promoting and developing the private sector, where we find that China has adopted general guidelines to encourage, support and guide the development of the private sector in economic terms. Also that it should make all efforts to create a healthy environment for the economic development of the private sector. This should accelerate the changes that should be made, including simple of restrictions on the private sector to reach its products to the market, give more support in terms of finance tax treatment, improved social services and government in this sector. [5]

List of proposed of research and development that are showed to organization of the private sector:

NO	Proposed	Urgent	Later On	Description
First: Technical Development				
1	Development of raw material			
2	Parts imported manufacturing			
3	Improve the quality of the product			
4	Reduce the cost of production and operation			
5	Develop the shape of the product catalog			
6	Develop alternatives for the product			
7	Design system for the maintenance of operating devices			
8	Training systems for engineers and technicians			
9	Operating systems development mechanism (operating automation)			
10	Diagnose problems with operation and production			
Second: Administration Development				
11	Automating administration			
12	Administrative staff training			
13	Programs are designed to measure achievement of human powers			
14	Feasibility studies for operation and production			
15	Feasibility studies of manpower			
16	Programs are designed to follow the development of profitability			
17	Design and preparation of programs Advertising			
18	Design marketing plans			
Third: The other problems faced the organization				
No.	Type of problem			Description of the problem

THE MODEL FOR THE PRIVATE SECTOR (STEEL ANGLES & FLATS FACTORY)

The Factory is located in Misurata city in the industrial region. It is considered the basis of other factories in dependent industries on the products of Libyan Iron and Steel Company.

The factory system consisted of many units which can be categorized as follows:

A. Manufacturing and production system.

B. Backup systems, which contribute to help the manufacturing and production system. They are as follows:

- Quality control system in a product for inspection and testing of the final product.
- Materials management system and storage, which contributes to the processing of raw materials, the final product and the best system for storage.

C. Support systems: They are as follows:

1. The energy grid system, which provides the factory with the electric power needed. It contains the following:

• Electrical convertor, kv 1000kv, 11 / v380, v220.

• Power generator of 1000 kw.

2. Maintenance workshops, which include all of the machinery maintenance workshops, turning and welding operations.

3. The water system, which provide the plant with cooling water.

4. Fire safety system, included specific gas cylinders.

5. Personnel, services, and transportation management system.

Production systems and accessories of the steel factory included the following data:

- Flowchart system functional units, as shown in Figure (1).
- Locations map of functional units as shown in Figure (2).
- The organization structure of the steel factory as shown in figure (3).
- Technical specifications of the products of steel factory as shown in table (1).

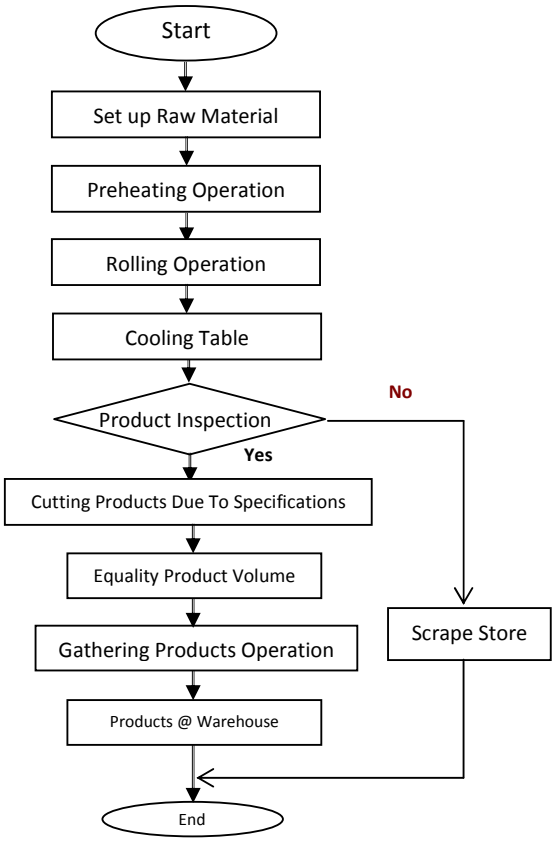


Figure (1) Flowchart system of functional units

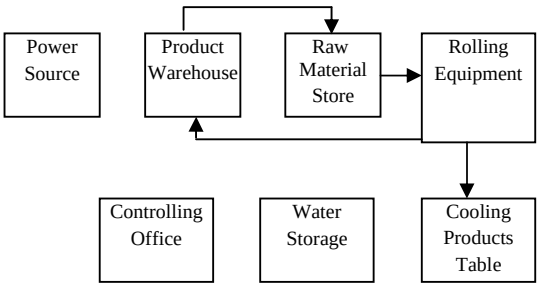


Figure (2) Locations map of functional components

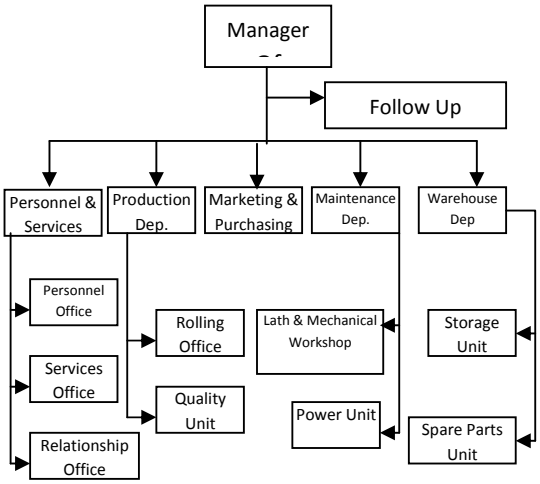
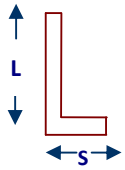
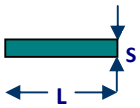


Figure (3) The organizational structure of the steel factory

Table (1) Technical specifications of the products of the factory

WEIGHT KG	Length meter	S mm	L mm	Description
6.66	6	3	25	Angles 
8.16	6	3	30	
10.68	6	4	30	
9.6	6	3	35	
12.54	6	4	35	
11.04	6	3	40	
14.52	6	4	40	
16.44	6	4	45	
20.28	6	5	45	
18.78	6	4	50	
22.62	6	5	50	
1.7	6	3	12	Flats 
2.83	6	3	20	
3.77	6	4	20	
5.65	6	4	30	
7.07	6	5	30	
7.54	6	4	40	
9.42	6	5	40	
11.78	6	5	50	
14.13	6	6	50	

PROBLEMS AND CHALLENGES FACING THE PRODUCTION IN STEEL ANGLES & FLATS FACTORY

- Irregular flow of electrical power for the plant, due to frequent power outages from the source.
- Lack of water services, causing an increase in production costs.
  - Lack of integrated industrial zone infrastructure, paving of roads and other related services.
  - Difficult administrative work pertaining to the workforce, in terms of accommodation and renewal permit, legal and sudden changes related.
  - The probability of changing the industrial area, causing instability and not being able to try to work a strategic blueprint for the plant depends on it.

CONCLUSIONS

1. Better performance in the private sector will be gained.
2. Full support for the private sector by the government will improve the quality of the products.
3. Increased integration between the private and public sectors.
4. Motivation for employees will give them encouragement.
5. The quality of employees training will improve the final products.

REFERENCES:

[1] Mahmoud Mohamed Abdullah Kisnauwi, Directing scientific research in graduate studies in Saudi universities to meet the requirements of economic and social development (actually - future directions), Umm Al-Qura University)

[2] Maher Hassan burned e.al , Small and medium-sized enterprises importance and constraints Amman, Jordan, 2006

[3] Arab Forum on the new role of the private sector in the development and operation (Rabat / Kingdom of Morocco, 21 - 23 October 2008. "the Arab Industrial Development Strategy and the challenges of operating and development" Setup / Arab Organization for Industrial Development and Mining.

[4] Ali Khader, small and medium-sized enterprises, University Press. Damascus 2005, 2006.

[5] Decision of the President of the State Council of China in January 2010, on the support and stimulate the private sector.

[6] Management File of production plant angles and flats.