

INTRODUCTION

This study examines the impact of organization elements on the performance of knowledge transfer in the petroleum sector in Sudan during the period from 2000 to 2006 focusing on the main variables, which are organizational culture, organizational structure, human resources, incentive systems, and how these variables affect the performance of knowledge transfer.

This introductory chapter presents importance of knowledge followed by brief information about Sudanese petroleum corporations and the international companies operating in the Sudan, followed by the problem statement, research questions and objectives; it also highlights the significance and scope of the study, and finally briefly describes the Structure and Organization of the Study.

Nowadays, we are moving steadily from information age to knowledge age, where knowledge has been recognized as the most important aspect in human life. Individuals and organizations are starting to understand and appreciate knowledge as the most valued asset in the emerging competitive environment.

Knowledge is a powerful tool that can make change to the world, it is now considered as the main intangible ingredient in the melting pot that makes innovation possible (Snchez et al, 2000).

Cropley (1998) emphasizes that "knowledge is nothing without people; people have knowledge, develop it and act on the basis of it. Data can be transmitted, information can be shared, but knowledge is an attribute of people, or communities or societies ".

Knowledge comes as a person uses information and combines it with their personal experience. Much of the knowledge one acquires and gathers in one's head has its own value, and it is that which makes each of us unique and valuable to society as a whole and to organizations. Tobias (2000) and Trepper (2000).

Knowledge and technological developments are critical to economic growth and sustainable development as well as to the effective and beneficial integration of developing countries in the new knowledge-based global economy. Sustainable development on a global basis requires accelerated transfer of knowledge and technology, especially ICT, from developed to developing countries.

i.1- Sudanese petroleum corporation (SPC):

SPC is assigned by the government of Sudan to develop the oil resources of the country. It is entrusted with the management of all petroleum operations, controlling and supervising them.

The Petroleum Resources Act 1998 and the Petroleum Regulations of 1973 regulate exploration and production of oil and/or gas accumulations in Sudan both onshore and offshore.

Major amendments have been introduced in the petroleum resource Act which gives the Minister of Energy and Mining, with the approval of the Board of Petroleum Affairs, the right to conclude agreements for the exploration and production of oil and/or gas in the Sudan.

All the Agreements signed by the Sudan Government with the international oil companies are Exploration and Production Sharing Agreements (EPSA). The EPSA embodies the entire rights and obligations of the Government and the Oil Company.

The Oil Company, under the EPSA, recovers its operations cost from an agreed and negotiable percentage of the total production. The profit oil is divided between the Government and the Oil Company according to certain percentage to be agreed upon by both parties.

Equipment of the Oil Company used in petroleum operations are exempted from custom duties. The oil discovered and exported by the Oil Company is exempted from any export taxes.

Exchange rights are provided for in the EPSA and the Oil Company is given the right to sell its share of oil and/or gas and keep the proceeds outside Sudan.

i.2 - SPC has the following purposes and Mandates:

- The development of oil resources and its good exploitation.
- Management of all petroleum operations all over the country, controlling and supervising them. SPC is the sole owner of concessions in all petroleum operations.
- The responsibility to secure the country needs from petroleum products.
- Conducting different exploration operations and oil production in or outside Sudan by itself or its affiliated companies or by participating with other companies.
- Refining of crude oil, marketing and distribution of petroleum products.
- Controlling and supervising all petroleum operations.
- Signing oil agreements and exploration licenses according to the policies approved by the Council of Petroleum Affairs.
- Responsible for the follow-up of execution.

The Ministry of Energy and Mining has adopted the block system. Since 1992, the Sudan basins were divided into a number of blocks based on the amount of geophysical, geological and drilling works done.

Most of these blocks are free for contracting with any company or a group of companies, which are capable financially and technically to do the work.

Studies of Sudanese crude oil properties have revealed a wide spectrum ranging from heavy to light oil.

i.3 - The International oil companies currently operating in Sudan:

- Block 1, 2, 4, **Greater Nile Petroleum Operating Company (GNPOC)**
The shareholders are **CNPC** (40%), **PETRONAS** (30%), **(ONGC)** (25%) and **SUDAPET** (5%)
- Block 6, **China National Petroleum Company CNPC** (95%) AND **SUDAPET** (5%)
- Block 5A, the shareholders **PETRONAS** (68.875%), **ONGC** (24.125%) and **SUDAPET** (7%)
- Block 3 & 7, **CNPC**, 41%, **PETRONAS**, 40%, **THANI**, 5%, **GPC** 6% and **SUDAPET** 8%
- Block B, **TOTAL EXPLORATION - Sudan**, the shareholders are **Total Exploration** (32.5%), **Marathon Petroleum** (32.5%), **Kuwait Foreign Petroleum Exploration Co.** (25%) and **GPC** (10%)

- Block 5B, **PETRONAS** (41%), **ONGC** (23.5%), **IPC** (24.5%) and **SUDAPET** (11%)
- Block 9, **Zaver Petroleum Co. LTD.** (85%), **SUDAPET** (15%)
- Block 8, **PETRONAS** (77%), **SUDAPET** (15%), **Hi Tech** (8%)
- Block C, **Cliveden** (37%), **Hi Tech** (28%), **SUDAPET** (17%), **Khartoum State** (10%), **Heglieg** (8%)

Petronas (Petroleum National Berhad): is Malaysia's national petroleum corporation established on 17 August 1974. Wholly-owned by the Government, the corporation is vested with the entire oil and gas resources in Malaysia and is entrusted with the responsibility of developing and adding value to these resources. Since its incorporation PETRONAS has grown to be an integrated international oil and gas company with business interests in more than 30 countries. As at end of March 2002, the PETRONAS Group comprised 73 wholly-owned subsidiaries, 21 partly-owned outfits and 45 associated companies. The Group is engaged in a wide spectrum of petroleum activities, including upstream exploration and production of oil and gas to downstream oil refining; marketing and distribution of petroleum products; trading; gas processing and liquefaction; gas transmission pipeline network operations; marketing of liquefied natural gas; petrochemical manufacturing and marketing; shipping; automotive engineering; and property investment.

CNPC (China National Petroleum Corporation): is a wholly State-owned corporation authorised by the State to make investments in petroleum and natural gas resources and related industries. **CNPC** is engaged in

upstream and downstream operations, import and export transactions, and production and marketing activities. Its business activities range across a number of industries throughout China and the methods of investment take a number of forms, which give it a diversified range of ownership. Its businesses include: oil and gas exploration and development, petrochemical production, petroleum trade, and servicing of petroleum-related projects. CNPC has abundant reserves of oil and natural gas and considerable experience in the exploration and development of oil and natural gas resources. CNPC is structured along modern enterprise lines. In 1999, CNPC reorganised its assets and restructured its business. As part of this restructuring, CNPC established the PetroChina Company Limited. CNPC has become Petrochina's parent company and it transferred to Petrochina most of the assets, liabilities and interests of CNPC relating to CNPC's domestic exploration and production, refining and marketing, chemicals and natural gas business. CNPC retained the assets and liabilities relating to its remaining business and operations, including assets and liabilities relating to international crude oil and natural gas exploration and production and refining and pipeline operations. CNPC is Petrochina's primary provider of a wide range of services and products. Another feature of this reorganisation is the partial privatisation of Petrochina. Global companies can become joint equity owners in PetroChina, with CNPC retaining majority ownership.

Petrodar PDOC: Petrodar Operating Company Ltd. is an operating company to carry out exploration, development and production of oil for Block 3E, 7E and 3D in Sudan. The company is incorporated under the laws of the British Virgin Islands and has a registered branch in

Sudan. The shareholder of PDOC is a consortium of international Exploration & Production oil companies.

GNPOC (Greater Nile Petroleum Operating Company Ltd.): is a joint operating company owned by CNPC of China (40%), PETRONAS of Malaysia (30%), ONGC of India (25%) and SUDAPET of Sudan (5%). In June 18, 1997, (GNPOC) was incorporated to operate as a petroleum company in Sudan. Currently GNPOC produces more than 300,000 barrels of oil per day. GNPOC Objectives is to explore, develop and produce the reserve potential in Blocks 1,2 and 4 and to transport the crude oil to the Red Sea Coast for export in a safe and cost effective manner.

Sudapet: is a Sudanese company established in February 1997 Sudapet is an oil and gas company specializes in E & P, G & G surveys, Research & Studies, O & M.A business company that operates in economic and commercial manner to maximize its shareholders value and Professionally aiming at growth and profitability Operate effectively, efficiently and safely. Develop and train the national workforce. Add value/increase the reserves and production. Contribute to the development of Sudanese nation

GDP in current prices & crude oil

(2001- 2006)

Value (SDD)

Table i.1

	2001	2002	2003	2004	2005	2006
GDP	3,370,495.50	3,839,164.56	4,203,818.88	5,342,990.17	6,432,876.10	7,548,147.30
Crude oil	1,269,222.00	1,396,455.00	1,934,020.00	2,957,243.00	3,948,318.00	4,704,025.00
% of crude oil in GDP	37.7	36.4	46.0	55.3	61.4	62.3

Source: Central bank of Sudan

i.4 - The statement of the problem

Creation and transfer of knowledge in an organization had become a critical factor in an organization's success and competitiveness. Many organizations are now concentrating their efforts on how knowledge, particularly tacit knowledge that exists in the organization, can be transferred across the organization.

The need to understand the successful performance of knowledge transfer System cannot be underestimated in Arabian organizations . A report from world Bank emphasize the power of knowledge and the need for these nations and their organizations to empower themselves through knowledge, previous studies investigated the relation between organization elements and the performance of knowledge transfer in developed countries. However, little studies have been conducted in developing countries and study conducted by Al Athari and Zairi (2001) in Kuwaiti organization. The study reported that the main difficulties of KMS implementation in private and government organization are adjusting people's attitudes, evaluating the performance of knowledge assets, determining what knowledge should be managed, and justifying knowledge initiatives. Another study conducted by Syed Omer& DR Fytown Rowland focused on organization elements relation with knowledge creation and performance of knowledge transfer. Given this background, this study attempts to answer the issues of relationship between organizational elements and the performance of knowledge transfer in the Sundance petroleum sector

i.5 - The Significance of The Study:-

Knowledge transfer has taken a centre stage in most of developed countries where people can only achieve the competitive edge in the market place. This issue of transfer of knowledge has recently witnessed a consideration by a number of developing countries in an attempt to develop and modernized their economy, to attract foreign investment , and to increase the volume of domestic investment. Despite the fact that many studies and researches have been done by a number of researchers like Beverly Awagner, 2003, Andrew Dellios, and Riesengerger, 1994, Cavusgel, 1996 on Knowledge transfer in private sector organizations and International Joint Venture organizations, little researches have so far been done in the field of knowledge transfer in the public sector, especially in developing countries

This study will contribute knowledge to the theory and practice of performance of knowledge transfer for developing nation organizations

The study contribution is on the form of:-

1. investigation in the influence of organization elements culture, organization structure, human resource and reward policy on the performance of knowledge transfer
2. The study Attempts to explain development of the culture of sharing knowledge among employees.
3. This study tests the impact of organizational elements variables on knowledge transfer performance within developing nations context
4. This study precisely concentrates on petroleum sector.

i.6 - Research Objectives:-

- To examine the relationship between the organizational elements and the performance of knowledge transfer.
- To find out the factors that affect sharing and transferring of knowledge between the employees in the public organization.
- To explore whether knowledge transfer performance s can be set up, and be consistent with and mutually supported by other human policies and process in public organizations.

i.7 – Research Questions and Inquiries:-

This research attempts to answer the following questions:

1. To what extent does the organizational culture influence the performance of knowledge transfer in the organization?
 - To what extent does sharing culture will improve knowledge transfer performance?
 - What is the impact of individualism on knowledge transfer performance?
2. To what extent does organizational structure influence the performance of knowledge transfer?
 - What is the relationship between the organization document confidentiality status, communication flow and knowledge transfer performance?

3. To what extent do the people / human resources influence knowledge transfer performance?
 - What is the relationship between posting of staff of the organization and the knowledge transfer of performance?
 - What is the impact of employees training on the knowledge transfer performance?
 - To what extent does staff-turnover affect knowledge transfer performance?
4. What is the relationship between the organization systems of incentives and motivation and the performance of knowledge transfer?

i.8 - Scope of the study:-

This study limits itself on the Sudanese petroleum sector in the State of Khartoum during the period of year 2000 to 2007. It focused on the impact of organizational elements on the performance of knowledge transfer in the organization.

i.9 - Definition of terms:-

The following key terms are repeatedly mentioned throughout this study and are operationally defined as:

i.9.A- Knowledge Transfer:-

Major and Cordey- Hayes (2002, p.411) defined a transfer of knowledge as a conveyance of knowledge from one place, person, ownership, etc... to another. It involves two or more parties and there has to be a source and a destination.

i.9.B- Knowledge sharing capability:-

Is the ability of employees to share their work-related experience, expertise, know-how and contextual information, through informal and formal interactions within or across teams or work units.

i.9.C- Explicit knowledge:-

Is the type of knowledge that can be easily documented and shaped (Choi & Lee, 2003). It can be created, written down, transferred or followed among the organizational units verbally or through computer programs, patents, diagrams, and information technologies (Choe & Lee, 2003; Perez & Pablos, 2003).

i.9.D- Tacit knowledge :-

Expressed by Polanyi (1966) as "we can know more than we can tell". This form of knowledge: i-) is embodied in mental processes: ii-) has its origins from practices and experiences: iii-) is expressed through ability applications; is transferred in form of learning by doing and learning by watching (Choi & Lee, 2003). Howells (1996) identified tacit knowledge as "uncodified and unembodied knowledge (know-how) that is obtained from learned behaviors and procedures through informal ways".

i.9.E-Knowledge management (KM):-

"The process in which firms create and use their own corporate and collective knowledge" (Civi, 2000) Davenport & Prusak (1998) identifies the KM concept as a "digital nervous system" that involves gathering and organizing knowledge and transfer it to the people who need it.

i.10 - Organization of the Study:-

The study will be laid out in an introduction and (3) three chapters, The introduction presents the importance of knowledge and a brief information about petroleum companies operating in Sudan , Also it introduces the study problem, objectives of the study, significant ,scope, and the questions of the study. Chapter one reviews the literature on knowledge transfer. Chapter two demonstrates the theoretical framework and research methodology. Chapter three presents the survey findings and the analysis. Finally is the conclusion and the discussion of the findings.