



# Aging Workforce at Saudi Aramco: Implications, Challenges and Strategic Directions

*International Journal of Scientific & Engineering Research Volume 8, Issue 10, October-2017*

# IJSER

**Master of Business Administration (MBA)**

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Academic Year: **2009/2010**

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Date: **January 30, 2012**

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## Abstract

*Saudi Aramco is an oil company owned by the Kingdom of Saudi Arabia. This company is internationally well-known due to its completely incorporated operations concerning extracting, draining and filtering fossil fuels such as crude oil and natural gas, There **area** variety of issues that companies need to address in developing successful strategies to better sustain the ongoing participation of a labor force consisting of mainly mature-age workers, The company occupies the leading role in terms of crude oil reserves and production with the capacity of producing vast amounts of fossil fuel,.most of which is exportedas crude oil and natural gas liquids (NGL).*

*New strategies are beingdetermined which can be implemented in order to increase the productivity of an aging workforce, while minimizing the effects of the Challenges facing Saudi ARAMCO and ensuring that the benefits which have accrued from the extensive experience of the existing workforce in the company are maintained. In this thesis I have discussed the motivation and remuneration strategies implemented byARAMCO as part of my thesis. I have also discussed the motivation and or remuneration strategies in detail in my literature review as well as the rest of the thesis.In the current thesis, I have adopted the documentary descriptive methodology in order to collect the needed data and information from the formal sources and documents available about the size of the aging workforce of Saudi ARAMCO in the Kingdome of Saudi Arabia..*

*I have used the survey descriptive method aiming to interrogate all the thesis sample participants or part of them to give a discussion about the thesis in terms of its nature. I have also used the interviewing method to gather data.*

## **Declaration**

*I, Ali Al Nasser (ID :332184), MBA Full Time; International Business School; Hanze University Groningen; Applied Sciences University; Zernikerplein 7, 9747 AS Groningen; The Netherlands; has hereby declared as far as my knowledge can record that: this is an original work by me and that this report is submitted in partial fulfillment for the award of Masters Business Administration (MBA) Degree.*

*Signature .....*

*Ali Al Nasser*

*Date.....*

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## **Dedication**

*This work is dedicated to my family, specifically my wife and children who have stood by me all these years during this programme.*

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## **Acknowledgement**

*Without the support of so many people this work would not have being possible. I therefore want to acknowledge the assistance of those who in one way or the other have made this work possible.*

*My thanks and appreciations first and foremost go to my Supervisor whose guidance and positive criticism has seen this report completed. For this I am extremely grateful. I also want to thank my lecturers for their patience with me during this Programme. Special thanks go to the support staff, Allice Nieboer and Rose Coates for their support.*

*They are great people. This report will not have been completed without the support of my course mates. Their patience and understanding has greatly made this work possible. Finally, my thanks to my wife and children for their patience and understanding. I love them all. For those who I may not have mentioned by name, though you assisted me one way or the other, I say thanks. May God greatly bless you all.*

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## Executive Summary

Saudi Aramco is an oil company owned by the Kingdom of Saudi Arabia. This company is internationally well-known due to its complete operations concerning extracting, drilling, and filtering fossil fuels such as crude oil and natural gas. There are a variety of issues that the company needs to address in developing successful strategies to better sustain the on-going participation of the aging labour force in its business. 24% of the workforce of its 54,000 employees is above 50 years old, and the indications are that the implications could be grave if nothing is addressed in the short to long term.

This problem is not being helped by the current lack of engineering graduates in the Middle East. This was recognized by the Vice President of Exploration and Production for ARAMCO, Abdullah As-Saif while addressing the 15<sup>th</sup> Conference for Middle East Oil and Gas Exposition. He said that “the huge reserve will not be exploited because of the aging work force on the one hand and the low number of new college graduates (specifically engineering) entering the petroleum industry. He noted the “Key drivers of delivering energy faster, better and smarter” are a highly skilled new generation to the industry, enhancing development and research, and implementing strategies professionally and efficiently. He went further and stated that ARAMCO has initiated a large information campaign in the region which reflects the high technologies that are employed to supervise the unmatched hydrocarbon reserves of Saudi Arabia. He suggested that by accessing the top students ARAMCO can ensure that its workforce needs can be sustained.

The likely options available to ARAMCO in dealing with their aging workforce situation could be: Recruitment of younger graduates and technicians in the areas of geology and petroleum engineering. This area of expertise is essential for the upstream end of its business. This area is most affected by the aging workforce factor in the Company and means that it must have an immediate succession plan.

The best solution is to put in place an apprenticeship program designed for the on the job training where the aging workforce can mentor the younger workforce.

1. Offering consultancy services to aging workforce after retirement;
2. Offering flexible work hours to the Aging Workforce;
3. Recruiting expert workers from different regions, particularly Europe and the USA, and
4. Offering attractive incentive packages to aging workforce and younger workforce.

The final strategy is a mixture of these options. Listening to the advice of IBM Consultants on what companies with an aging workforce should do would put the company on the right track and that is:

- Redirect recruiting and sourcing efforts to include mature workers

- Retain valued employees through developing alternative work arrangements
- Preserve essential knowledge before it walks out the door
- Provide opportunities for workers to continually update their skills
- Facilitate the coexistence of multiple generations in the workforce
- Help ensure that mature workers are able to use technology effectively in the workplace.
- Redirect recruiting and sourcing efforts to include mature workers.

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# 1. Chapter One: General Introduction

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## 1.1. Introduction

This study is about developing strategic directions for Saudi Aramco, a company operating in the oil and gas sector beset with the challenge of finding skilled labour in its industry. Although there may be many factors that may be attributed to this human capital crisis, such as inadequate new graduates on the market in the field of geology and petroleum engineering compounded with the company's high rate of retirement of its aging workforce, this study focuses on the aging workforce factor. The study looks at ways of mitigating this impact of high retirement rate due to the aging workforce after an analysis of the impact of the same factor. The study took place at the Saudi Aramco company in Saudi Arabia.

In this introductory chapter, there will be presented a general introduction of the oil and petroleum industry and how human capital is increasingly becoming a concern due to the aging workforce in general and to the company under study in particular. The chapter will later introduce the study company from where the problem statement will be clarified. The chapter ends with the motivation for choosing the study and also provides a general outline of the whole report.

## 1.2. The oil industry and the Aging workforce

As the world's "experienced oil and gas hands become a scarce commodity" (Dow Jones Newswires), it would be naïve for any company in the oil industry to sit and do nothing about this human capital crisis. In our current global economy of increasing innovation, massive competition and consumer demand driven economies, the need for experienced human capital needs not to be overemphasized.

As Angel Gonzalez reports (Dow Jones Newswires, 2006), many oil and gas companies planning to increase output are nearing a wall: "Nearly half of the aging workforce engaged in exploration and production activities will retire in less than a decade." Some scholars think this is serious and may not come to fruition except as these companies deliberately choose to "hire, and retain, enough people to staff them" (ibid).

An interesting article cited below provides the big picture of the crisis in the oil industry:

Since oil prices peaked in real terms in 1981, major oil and gas companies have laid off nearly 1.1 million employees, according to energy consultancy John S. Herold. This drove a whole generation of technicians and managers into other industries and discouraged students from entering the field. Now hard-pressed to increase production and replace dwindling reserves, companies are paying for their old sins. A "very small pool" of talent is "being spread really thin," said Claire Markwardt, a Houston-based partner with Accenture, a consultancy. The amount of talent in the pipeline is paltry, she added.

Enrollment in U.S. petroleum engineering programs in 2004 was 2,500, down from 12,000 in 1982.

Also, as many as 40% of U.S. petroleum engineers currently employed will retire before 2014, [Alex} Preston [, head of The Energists, a Houston-based energy recruiting firm] said. The average age of a petroleum engineer, who advises on the best way to develop hydrocarbon reservoirs, is 49 years.

**Source:** "Experienced Oil And Gas Hands Become A Scarce Commodity" Cattle Network (February 14, 2006), [online], accessed December 8, 2011, available at: <http://www.agingworkforcenews.com/2006/02/oil-and-gas-industry-being-hit-by.html>

The challenge of the aging workforce in the energy sector, particularly, the gas and oil industry is pronounced and importantly worth understanding because it is about the survival of this industry as "brainpower, human competencies and physical energies are the very air that businesses breathe" (Leibold & Voelpel, 2006). In the wake of the global economic crisis of 2008, OPEC warned the oil and gas sector not to repeat the mistake of the past by initiating the cost cutting measures of the 90s when critical staff was let go only to experience problems when the prices of oil improved. Thus OPEC, cited in the Article 'Challenges for the oil and gas workforce' (Oil and Gas 09/03/2010), requested that 'worldwide efforts must be stepped up to recruit more talented oil and gas graduates to the industry and increase interest among current employees'. OPEC stated that a truly global approach was said to be needed to ensure greater enrolment in and availability of energy related courses to meet the future needs of the oil and gas industry and to "continually broaden the ways and means of training and keeping the talented people the industry takes on." (Clapham, M. M. and Fulford, 2007)

When looked at from a regional perspective, the problem of the aging workforce is very acute for the Middle Eastern Countries. Oil and Gas (Journal) reported that Bahrain currently relies on the oil and gas industry for 13 per cent of its GDP and is looking to increasing production by 70,000 barrels per day in the coming years. The country has however expressed fears following the revelation that the average worker in the country's oil and gas industry is 50 years old. According to oil and gas affairs Minister and National Oil and Gas Authority (Noga) chairman Dr Abdulhussain Mirza, there is already a 38 per cent shortage in skilled labour in the region, particularly petroleum engineers and geologists (Oil and Gas 09/03/2010). This disclosure was made to delegates at a conference: "All Gulf Cooperation Council (GCC)" countries that are looking for ways to increase their oil and gas capacity and for this, they will compete for limited talent. Mirza stated "we need a younger generation who have the right qualifications and are more attuned to the new technologies."

According to Oil and Gas, Bahrain plans on investing \$8 million (£5.1 million) on training its workforce for the future, but the problem is not just localized to the country. Across the Middle East, countries are facing the prospect of a skilled labour shortage. Michael Ohadi, interim president of the Petroleum Institute in Abu Dhabi, cited in the Oil and Gas article said that up to

50 per cent of the skilled oil and gas workforce may retire in the next 10 years and there are not enough graduates waiting to replace them. He stated, "Middle Eastern economies are far behind those of the top 10 worldwide and the region's education system is lacking—we do not have a single university that stands out in the international rankings, let alone a technical university that compares to the standards of the rest of the world," Ohadi explained (Barth, M. C, McNaught, W., & Rizzi, P. 2003). This shows that the issue of aging workforce across the oil and gas industry, particularly in the GCC countries where Saudi Aramco operates needs urgent attention.

### 1.3. Overview of Saudi Aramco

#### 1.3.1. Key figures - Aramco

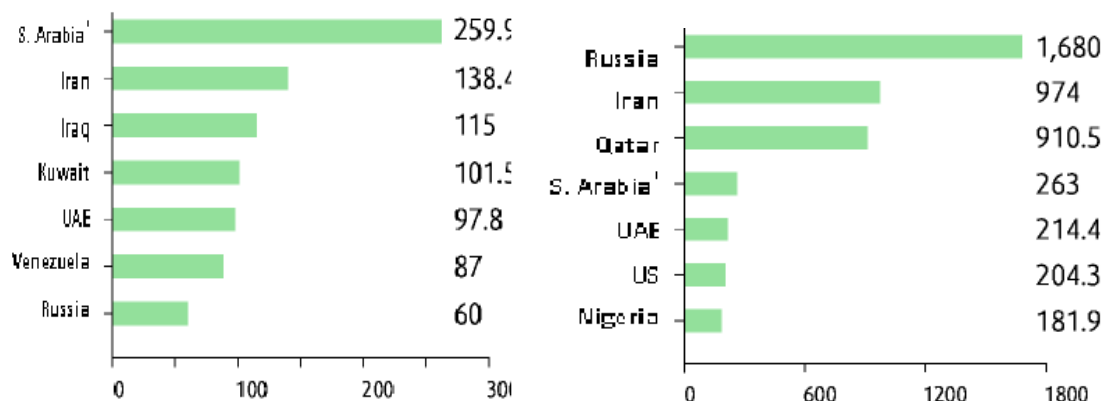
Saudi Aramco is an oil company owned by the Kingdom of Saudi Arabia. It operates both in the upstream and downstream sector of the oil industry ranging from extraction, refining and sales. It is the largest oil company in the world by reserve (Deloitte, Energy & Resources; May 2009). Aramco controls the amount of 259 billion barrels of crude oil of the world reserve. The company has 231 trillion standard cubic feet of gas reserves. It produces a fourth of the average world production of gas per day in the amount of 6.9 billion standard cubic feet (Rasheed 2008). In addition, it is located in a strategic location compared to other oil companies throughout the world. Below is an extract showing some key figures about the company:

Oil reserves and production	Recoverable crude oil and condensate reserves	259.9 billion barrels
	Crude oil production (average per day)	8.9 million barrels
	Crude oil production (annual)	3.26 billion barrels
Gas reserves and production	Gas reserves	263 trillion cubic feet
	Gas production (raw gas to gas plants) (average per day)	8.3 billion cubic feet
	Gas production (annual)	3.0 trillion cubic feet
Natural gas liquids (NGL)	NGL production (average per day)	1.0 million barrels
	NGL production (annual)	402.2 million barrels
New discoveries	Oil fields	Niyashin
	Gas fields	Rabib, Arabiyah
Wells completed	Oil exploration	11
	Gas exploration	12
	Oil development	396
	Gas development	78
Workovers	Oil workovers	113
	Gas workovers	8
	Water workovers	55

Figure 1:1 Key Figures for Saudi Aramco, source: Aramco Annual Review 2008

## Estimated Worldwide Crude Oil and Gas Reserves as of January 1, 2009

Source: *Oil & Gas Journal*



The company has a workforce of 54,000 employees of which 85% are Saudis Nationals and 15% expatriates nationals (Baco.com/projection systems). The headquarters of the company lies in the Eastern province of Saudi Arabia (Dhahran). Operational facilities stations are spread across the kingdom. This makes product distribution networks easier across all markets through one tunnel in addition to terminals at the Arabian Gulf port for exporting issues.

Table 1:1 Workforce as of December 31, 2008<sup>1</sup>

Saudi	47,502
Expatriate	6,939
Total	54,441

Globally, Aramco holds substantial joint venture interests in refining and marketing in different countries and continents including China, USA, Philippines, Republic of Korea, Europe, North America, and the Far East (Ahmed *et.al*, 2004). For shipping oil to all customers, Aramco owns and operates a fleet of super tankers. Aramco has an agreement with a Dutch company for exploration, refining and production of natural gas covering more than 200,000 square kilometres in Rub Al-Kali at a project cost of \$2 billion total cost (ibid, 2004).

### 1.3.2. Need for human capital at Aramco

Aramco is an international petroleum enterprise company that is completely integrated. Its operations are in exploration, producing, refining, allocation, transporting, and marketing oil and gas. To meet the massive operational challenges associated with the broad ranges of business in which the company engages in requires a huge investment in human capital, particularly the

<sup>1</sup>Saudi Aramco, Annual Review 2008, p.58

upstream sector of drilling and refining. However, as has already been stated, engineers and geologists within the energy sector besides being in decline are aging. Of the company's 54,000 employees, 25% are 50years and above, thus, presenting a real aging workforce challenge to Aramco.

### **Saudi Development Programs**

Table 1.2 shows the numbers of the workforce and some non-employees that Saudi Aramco supports in its staff development education system:

Table 1:2 Number enrolled at year-end 2008 (source: Saudi Aramco, 2008 annual report)

Two-year apprenticeship <sup>1</sup>	4,897	Associate Degree Program Non-Employees	52
College Degree Program (CDPNEs) <sup>2</sup>	1,298	Advanced degree	281
Co-op Students	117	Advanced medical/dental	20
College Preparatory Program	346	Two-year technical diploma	56

1. plus 100 apprentices at SASREF  
2. excluding College Preparatory Program

### **1.4. Nature of the Problem in the Study**

In this study, focus will be on finding ways of lessening the impact of the aging workforce at Saudi Aramco since 25% of the company's 54,000 employees are 50years and above. In chapter two, a section is assigned to outline the problem statement concerning this study. It is important to note that although the challenge of the aging workforce is global and not specific to Saudi Aramco, it is still relevant to state here that a specific study to do with Aramco is still relevant because the company needs to survive within the global economy depending on the strategies it embarks on.

### **1.5. Personal Motivation**

The MBA modules of Strategy Management and HR Management taught me that for businesses to continue to survive and stay competitive they must understand the forces within and outside their operating environment. Thus tools such as PEST, SWOT and Performance Measurements are proposed as means of conducting internal and external analysis of companies to enable them plan on how to achieve their objectives.

The Kingdom of Saudi Arabia being reliant on oil as the main source of its GDP and Aramco being the leading oil company 100% owned by the country viz the demographic



changes taking place in the industry has motivated me to look at the chosen topic as a means of proffering options that the company could pursue to remain competitive.

## 1.6. Report Structure

This thesis will include an introduction that talks about Saudi Aramco in general and the aging workforce in it in particular. After that the thesis will address the framework tackling the previous studies in that field and trying to explain the similarities and differences between them and the current thesis. The third part will be the methodology which addresses the population, sample, data collection, validity, reliability as well as data analysis. The thesis will also discuss the motivation and or remuneration strategies implemented by Aramco as part of my thesis. I will discuss the motivation and or remuneration strategies in detail in my literature review as well as the rest of the thesis.

The report is made up of nine parts as follows:

- Chapter 1- Introduction. This gives an overview of the context of the study.
- Chapter 2-Methodology. This lays out the research approach and design by which the study is undertaken.
- Chapter 3- Literature review. This will review the different aging concepts like Age Stereotypes, some recruitment and Selection process, Age, Performance and Performance Evaluation, Age, Training and Career Development and etc
- Chapter 4- Research findings
- Chapter 5– Data Analysis. This considers key data gathered and analyzed them.
- Chapter 6- Discussion of Findings. This chapter discusses the results of the Analysis;
- Chapter 7- Strategies Options. This discusses the possible strategic options, Chosen Strategy. This recommends the probable strategy.
- Chapter 8- Implementation of Chosen Strategy. This considers how the company could achieve the chosen strategy
- Chapter 9- Reflection. This chapter looks at the author's thought on the entire thesis exercise. What was learnt and what is to be done differently in the future.

## 2. Chapter Two: Research Objectives, Design and Methodology

---

### 2.1. Introduction

In this chapter, an outline of the research methodology and design will be presented. The chapter looks at the research objectives and the research questions that need answers from the study in the chapters to follow. The problem statement will also be clarified. It is in this chapter that the issues of population samples, tools for data collection and how the collected data will be analysed are stated. The chapter also discusses the scope and limitations of the research. As an approach and plan of executing a research, it is critical chapter to the success of the said research. As Saunders et.al. (2009, p. 136), state that ‘the research design will be the general plan on how you will go about answering your research questions’, this chapter basically does just that. It contains clear objectives derived from research questions, specifies sources from which you intend to collect your data, and look at constraints that arise including access to data, time, location and money) as well as discussion of ethical issues.

### 2.2. Problem Statement

Saudi Aramco, a Saudi Arabian company in the oil and gas industry has approximately 24% of its 54,000 man workforce in the aging bracket. Globally, the challenge of the aging workforce is observable as one independent oil company representative stated, “The people are just not there.”<sup>2</sup>A number of oil and gas companies seem to indicate this challenge as their highest-priority issue and “critical to solve.”As per 2008 annual report, less than 3% of Saudi Aramco employees were enrolled for both degree and advanced degree programs with the company’s staff development plan. The company employees close to 15% expatriate employees. The shortage of engineers and geologists in the oil and gas industry, particularly within the GCC countries of which Saudi Arabia is part and Aramco operates is observable from this number of expatriate employees who are mainly in this category. With a high percentage of aging workforce, mostly engineers and geologists found in the upstream sector of the industry and contributing about 24% to productivity per normal worker, the bigger challenge may only be anticipated than is seen at present.

Compounding this problem is the recognition of the fact that there are not many engineers and geologists in the industry graduating to replace this aging workforce. For example, Michael Ohadi, interim president of the Petroleum Institute in Abu Dhabi, said that up to 50 percent of the skilled oil and gas workforce may retire in the next 10 years and there will not be enough

<sup>2</sup>Bob Orr and Bridget McVerry, Talent management challenge in the oil and gas industry, DECEMBER 2007, Wiley Periodicals, Inc.

graduates waiting to replace them. This is more pronounced for GCC countries where Aramco is headquartered (Oil and Gas 09/03/2010).

If we consider Aramco with 85% of its workforce being Saudis Nationals and 15% are expatriates making up the engineers and geologists. Then coupled with the aging factor and a lack of engineers and geologists of Saudi nationality, then the issue of challenges and strategies to address the Aging workforce for Aramco is urgent. Saudi Aramco further admits that:

Finding and retaining international talent in an increasingly competitive environment for talent requires a sustained effort on the part of our Expatriate Employment organization, which works in tandem with our affiliates ASC and AOC. In 2008, we participated in more than 138 conferences, workshops and exhibits in the Middle East, the United States, the United Kingdom, Europe, India, Australia, Africa, South America, and the Far East to source the best qualified candidates (source: Saudi Aramco 2008 Annual Report).

### **2.3. Research Objectives**

#### **Main Objective**

To explore the extent of the aging workforce challenge in Saudi Aramco Company and develop possible sustainable strategic directions to mitigate the impact of this challenge.

#### **Subordinate Objectives**

- i) To gain some appreciable insights of the aging workforce challenge in the oil and gas industry globally.
- ii) To assess the extent of the aging workforce challenge in Saudi Aramco.
- iii) To investigate the implications of the aging workforce for Saudi Aramco.
- iv) To assess how local environment (national factors) such as the Saudi educational system and demographic trends contribute to the aging workforce challenge at Saudi Aramco.
- v) To investigate whether the human resource management strategy /policy at Aramco could have any influence on the aging workforce challenge at Saudi Aramco.
- vi) To develop possible strategic directions to help mitigate the challenge of aging workforce at Saudi Aramco.

### **2.4. Research Questions**

#### **Main research question**

To what extent is the aging workforce challenge significant for Saudi Aramco Company and what strategic directions could possibly mitigate the impact of this challenge for Saudi Aramco?

#### **Research questions**

- i) To what extent is the aging workforce challenge affecting the global gas and oil industry?

- ii) To what extent is the aging workforce challenge significant at Saudi Aramco?
- iii) What are the implications of the aging workforce challenge for Saudi Aramco?
- iv) How does the Saudi Arabia national environment contribute to the aging workforce challenge at Saudi Aramco?
- v) How could the human resource management strategy / policy at Aramco contributing to the aging workforce challenge at Saudi Aramco?
- vi) What are the possible strategic directions that could help mitigate the challenge of the aging workforce in Saudi Aramco?

## 2.5. Conceptual framework

Figure 2.1 shows the study's conceptual framework. In this study, it was necessary to start by understanding the issue of aging in the oil and gas industry globally by use of secondary data. This was aimed at understanding the areas most affected in the industry thereby presenting challenges and also understanding what HR practices were dealing with the trend to identify possible gaps in those practices for possible solutions. The next stage looked at Aramco specifically in the Saudi Arabia national environment context to further investigate the possible contributions of the national environment to the company's aging factor and also to look at HR policies on aging at Aramco. The framework then proceeds to show how possible strategy options that can deal with the aging factor at Aramco were developed. The final stage is how Aramco could go about the implementation of the chosen strategy.

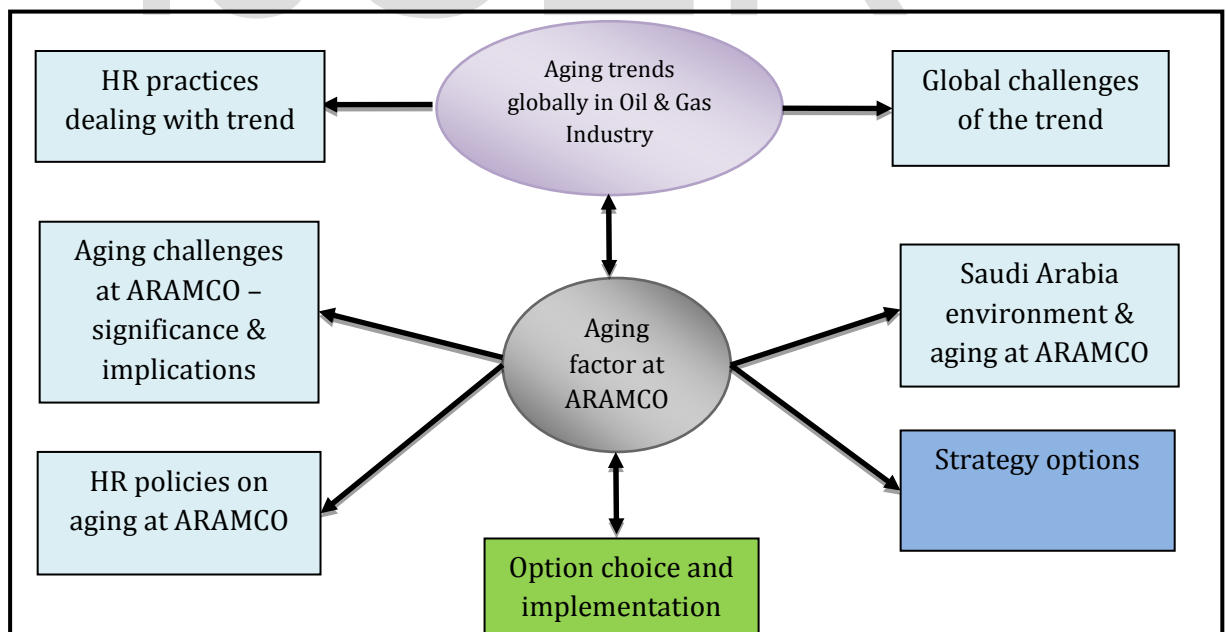


Figure 2:1 The Conceptual Framework (research)

## 2.6. Research Technique and Design

### **2.6.1. General overview of the process**

The study process started with data collection as shown in Figure 2.2 below. This focused at identifying the depth of the aging workforce challenge in the global oil and gas industry and at Aramco by investigating the trends and practices from both primary and secondary data. The data analysis phase was aimed at analyzing the data obtained from data collection using tools as shown later in the analysis chapter. The final part dealt with conclusions and recommendations arising from the study findings and analyses.

**Figure 2:2 The Research process**

### **2.6.2. Population definition and sampling sizes**

This study was about Saudi Aramco, a company headquartered in Saudi Arabia and therefore it became relevant that the bulk of the study population be from Saudi Arabia and from the company itself. Among the sampling conducted, the study involved collecting data from employees at Aramco, industry experts and academicians. The industry experts were drawn from within the oil and gas industry while academicians span across sectors such as education and the business world. Employees were an essential sample because of their direct involvement with the company and their perceptions of whether the company's HR policies and practices on aging trends are important. Industry experts and academicians/consultants were expected to provide useful insights into the subject matter from a broader industry and theoretical perspective on how to tackle the problem. A total population sample of ninety (90) respondents made up of eighty employees, five industry experts and five academicians was involved in the study.

Table 2.1 shows the demographic characteristics of the selected sample for the study by use of three distinguishing characteristics: career, educational qualification and work experience as shown in the table.

**Table 2:1 The Demographic Characteristics of the Research Sample (N=80)**

Categories	Frequency	Per cent (%)
<b><i>Career</i></b>		
Administrator	18	22.00
Employee	62	78.00
<b>Total</b>	<b>80</b>	<b>100.00</b>
<b><i>Educational Qualification</i></b>		
BA	69	86.25
MA	8	10.00
PhD	3	3.75
<b>Total</b>	<b>80</b>	<b>100.0</b>
<b><i>Work Experience</i></b>		
Less than 5 years	17	21.25
5-11	34	42.50
11-15	29	36.25
<b>Total</b>	<b>80</b>	<b>100.00</b>

The study included quite a significant sample spread in that it involved quite a well spread grouping of the respondents from the three background factors (categories) of the respondents: career, educational qualification and work experience. These respondents were sufficient to provide a variety of responses that were quite insightful in the study. Although the above sample may not be representative enough for the whole country of Saudi Arabia and not even for the company under study, it would still provide some useful insights that could be developed further by other researchers.

### **2.6.3. Data collection procedure and instruments**

In order to help in the obtaining of primary data, questionnaires and interviews were used. All the sampled employees were asked to complete a self-administered questionnaire while industry experts and academicians were interviewed. The choice of interview and questionnaire for the samples was based on convenience and appropriateness as the one group was large and could only provide data by questionnaire due to time limitations while the other group was relatively small and was expected to provide further insights into the challenges faced by oil and gas industry players relative to the aging workforce. Interaction with industry experts and academicians has provided useful information on what strategies are required to be developed to ensure that oil and gas companies handle the aging factor effectively without jeopardizing their operations and productivity.

## 2.7. Data analysis

The primary data obtained from the research was input into the statistical package for social sciences (SPSS) software and analysed as shown in Chapter four. Both primary and secondary data were analysed by use of the model of analysis shown in Figure 2.3.

The framework firstly looks at the global trend and practices on aging in the oil and gas sector. This is necessary as it gives a broad overview of the problem and measures/practices to address it. The next stage is to look at the country context using PESTEL tools to understand the aging factor in Saudi Arabia and how this can be dealt with. A particular focus will be on government's policies on age and education relative to the sciences. The SWOT model may be applied to Aramco to review strategic directions (Kotler, 1998).

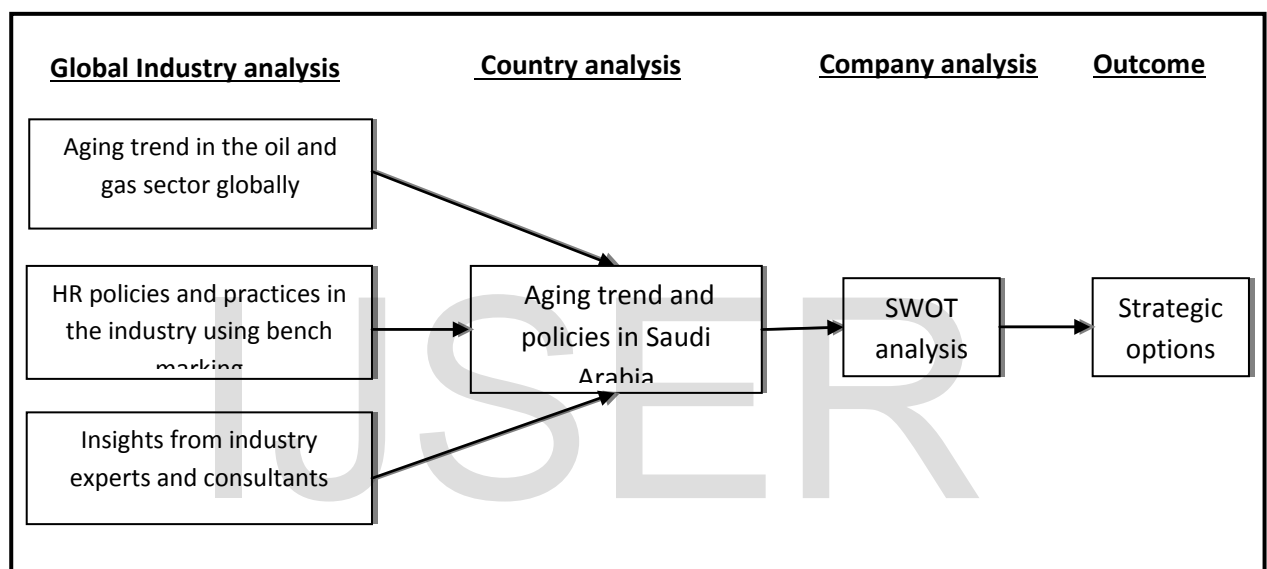


Figure 2:3 Data Analysis Framework

## 2.8. Limitations of the study

The shortness of time and lack of resources were limitations of this study. While the findings from secondary data and primary data in this study may have been limited due to personal biases of the researchers and respondents, they however provided a direction where Aramco may need to look if it intends to meet head on the issue of aging workforce in the oil and gas sector.

## 2.9. Conclusion

Chapter two looked at the design of this study and looked at how the study was carried out in order to come up with both primary and secondary data. The chapter also took a detailed look at the framework that will be used later in chapter four to analyse the study findings. The next chapter builds upon this design by taking a look at literature review in order to establish the missing dimension that will be fixed by this study.

### **3. Chapter Three: Literature Review**

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#### **3.1. Introduction**

This chapter is about the study of what is available in literature about the aging workforce management. Although this chapter is named as literature, it is not necessarily in this chapter alone that literature may be reviewed in this study as authors like Saunders (2009) rightly argue. The chapter looks at the issues that concern the aging workforce and some mitigating factors that may have already been implemented elsewhere. The purpose of this chapter is to develop awareness to the gaps that may be there in theory in order to render this study relevant.

#### **3.2. Motivation on literature choice**

So much literature out there is available for this study. However, not all of it was considered relevant for this study. In order to remain focused on the issue of aging workforce in relation to Aramco, only such literature as could provide comparable factors such as environment and industry for instance, was considered relevant for this study. The researcher deliberately chose to follow the conceptual framework of the study in developing thoughts on literature review in order to provide relevant literature.

#### **3.3. Aging Workforce in the oil and gas industry globally**

In an article, "Oil and gas workforce – a shortage in skilled labour?", published by the online magazine ngoilgasmena.com, Jodie Humphries stated that the slump in oil prices in the late 80s and early 90s resulted in significant numbers of skilled workers being deprived of jobs in the energy industry. Not only did such workers abandon the industry, but future generations were also discouraged from pursuing careers in energy. As an example of this critical shortage, Humphries quoting Said Nachet, Energy Director at the Riyadh-based International Energy Forum (IEF) as recorded by Emirates Business 24-7, stated that the hydrocarbon sector that was not only said to be in dire need of skilled staff, but that nearly 50% of the industry's current skilled workforce will be lost to natural attrition through retirement within the next 10 years as junior recruits comprise barely 15% of the resource base. Similar warnings were expressed by Michael Ohidi, interim president of the Petroleum Institute in Abu Dhabi, who said in 2008 that the majority of the employee roster is looking to retirement. He said up to 50% could potentially retire within ten years.

Figure 3.1 pictures the findings of the study by Watson Wyatt on Asia Pacific's Ageing Workforce™ (quoted in the US Census Bureau) concerning the ageing workforce in Asia. The



study showed that by 2050, Asia Pacific will be home to most of the world's elderly people, "with 998 million people aged 60 and above". The report further gives this picture:

In Asia's most developed countries this phenomenon will be at its most dramatic: for example, in Singapore the proportion of the population over age 50 is set to increase from 23% to 50% over the next 25 years. Many employers in Asia Pacific already experience a shortage of skilled labor, so the implications for the future workforce are serious. Employers will need to focus far more attention on attracting and retaining older workers (source, Watson Wyatt Asia Pacific's Ageing Workforce™ study)

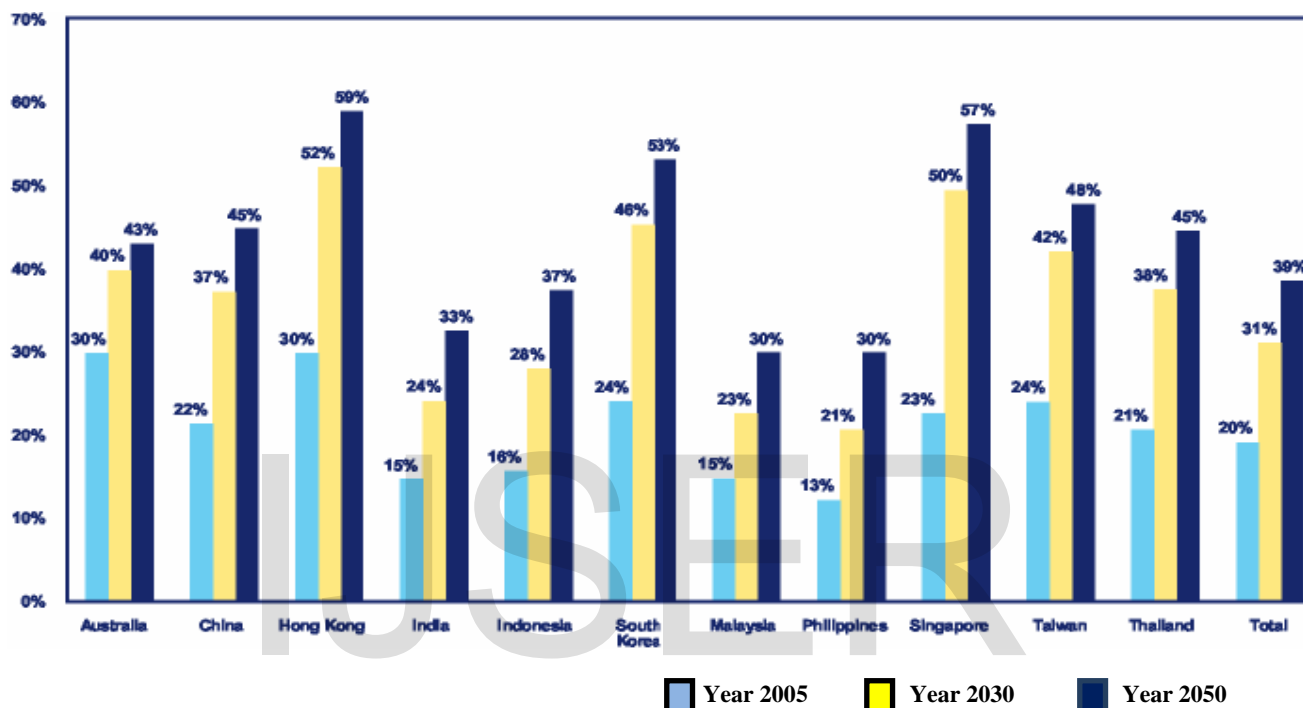


Figure 3:1 Asia Pacific's demographic transformation (Percentage of population aged 50 and above)  
(Source: U.S. Census Bureau)

Another study on the talent management challenge in the oil and gas industry suggests that specific shortages of talent will be in specific skill areas as shown in figure 3.2 below:

percent of survey respondents expecting shortage in position, five-year time horizon

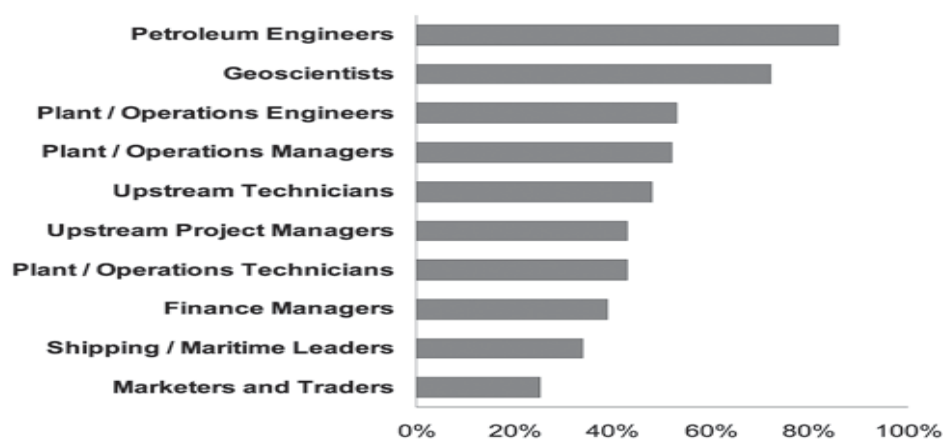


Figure 3:2 Forecasts of skill shortages in oil and gas industry (Bob Orr and Bridget McVerry, 2007)

Globally, the picture seen concerning the aging workforce is quite serious as Leibold and Voelpel (2006) suggest. They indicate that there will be a critical shortage of labour towards the year 2030 as shown in the figure below:

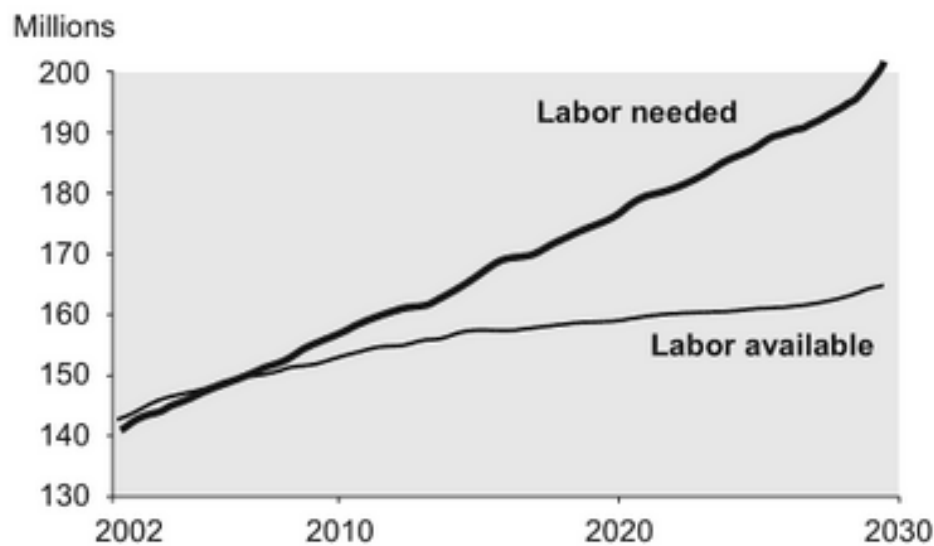


Figure 3:3 How labour demand will outstrip supply up to 2030 (Leibold & Voelpel, 2006, p.23)

### 3.4. The significance of the aging workforce challenge for Aramco

The researcher thought it necessary to study the significance of the aging workforce challenge at Aramco in order to establish that the challenge was not imaginary but real at the company. In order to establish this, the researcher put together available data from the company in order to develop the situation analysis of the company as described below. Further, the issues to do with human resource were also considered.

#### 3.4.1. HR policy and practices on Aging workforce at Aramco

As a recognition to have the right policy to address the HR challenges presented by an aging workforce, As-Saif said “Aramco will have the chance to attract young employees and the students will be trained and employed in one of the biggest enterprises not only in the Arabic region but also worldwide, with the intention they are engaged as they commence to consider their higher educational and successive job choices”.

In line with such policy, Aramco has in place the following policies and practices dealing with aging factor in its rank:

- Award of scholarships to students pursuing career in engineering;
- Award of consultancy to old workers reaching retirement;
- Reduction of the number of hours old workers can work without reduction in compensation
- Establishment of internship training for young engineers to understudy old engineers;

### 3.5. Global HR Strategic Views in dealing with aging workforce

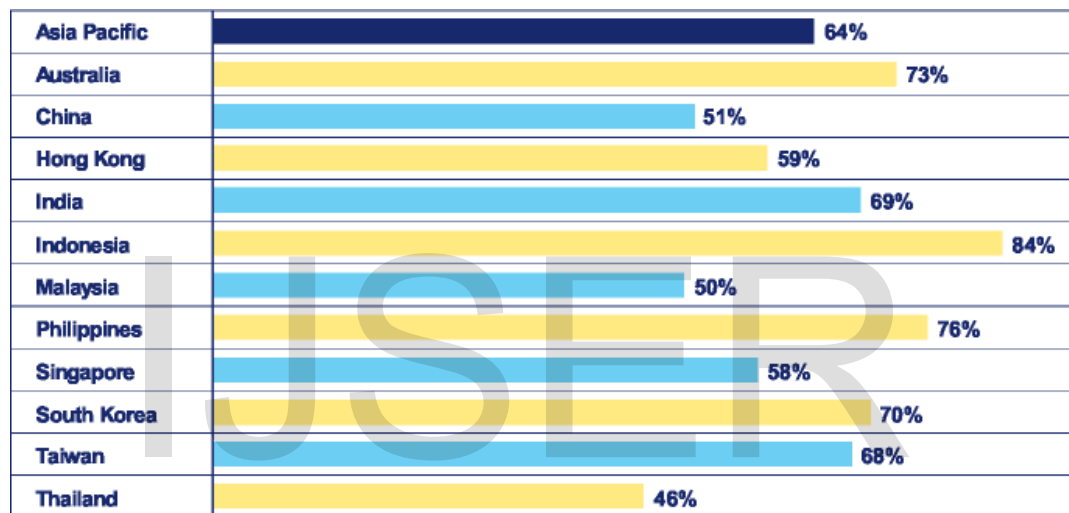
Geipel<sup>3</sup> (2003) suggests what he termed the aging/workforce equation which looks something like this:

$$\text{Global Aging} + \text{Regional Factors} + \text{Policy Options} + \text{Wildcards} = \text{Workforce Outcomes}.$$

Although the implications of this equation may not be fully understood, it seems reasonable to deduce that there is a contribution that comes from ‘policy options’ that an organisation may take. These policies, to an extent, will concern with the human resource. Other studies done in Asia Pacific indicate that there was a high level of employer awareness of the aging problem<sup>4</sup> as shown in the figure below:

#### Will Ageing Have a Serious Impact?

Percentage of respondents who believe that ageing will seriously impact society and the economy



Source: Watson Wyatt Worldwide

Figure 3:4 Results of economic impact of aging workforce – Asia Pacific, 2006

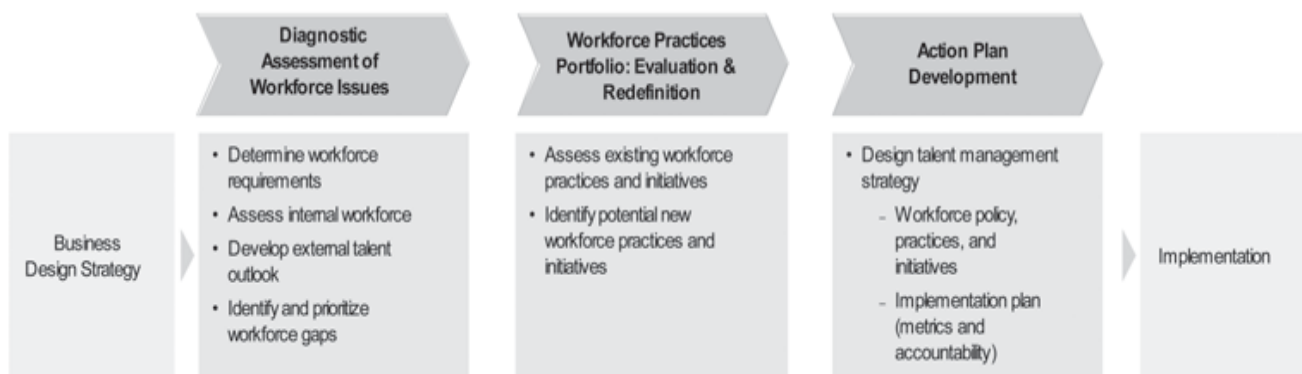
If there is any region of the world that is more reliant on the oil and gas sector than any other, then it is the Middle East, especially those countries making up the Gulf Cooperation Council (GCC). More than 50% of the GDP of these countries are tied to oil and gas. Thus the region is paying special attention to the issue of aging work force in the region. According to Dr. Abdul Husssain Mirza, chairman of the National Oil and Gas Authority (NOGA) of Bahrain and the Minister of Oil and Gas Affairs, there is already a 38% shortage of skilled labour in the region (i.e. the Middle East). Addressing delegates the “All Gulf Cooperation Council Countries on exploration of ways to their oil and gas capacity” for which they will compete for limited talents, Dr. Mirza stated “we need a younger generation who have the right qualifications and are more

<sup>3</sup> Global Aging and the Global Workforce, March 3, 2003, by Gary L Geipel (available at: [http://www.hudson.org/index.cfm?fuseaction=publication\\_details&id=2740](http://www.hudson.org/index.cfm?fuseaction=publication_details&id=2740))

<sup>4</sup> Ageing Workforce, 2006 report

attuned to the new technologies." Michael Ohadi, interim president of the Petroleum Institute in Abu Dhabi, speaking at the same conference reiterated the urgency when he said that up to "50 per cent of the skilled oil and gas workforce may retire in the next 10 years and there are not enough graduates waiting to replace them".

Oliver Wyman developed what he termed the "Talent Management Strategy Approach" which companies may need to use in dealing with the older workers' challenge as shown in Figure below:



**Figure 3:5 Oliver Wayman's Talent management Strategy (source: Leibold & Voelpel, 2006)**

### 3.5.1. Age Stereotypes

Knowing the role of age and ageism in any business organization is significant to differentiate between the attitudes toward and perception people have regarding older people and the behaviour toward older inhabitants, and institutional performance and strategies as they relate to elder people. Much of the study exploring the content of elder worker stereotypes in the Saudi Arabia is dated but proposes that people often hold negative and wrong beliefs in relation to older workers. For instance, older persons have been professed as less effective, less active and energetic, resistant to change, less imaginative, less trainable, more opinionated, and having less performance ability, potential for development and interpersonal skills. On the other hand, there is also proof that beliefs concerning older workers are not always negative. For instance, older workers often appear to be more consistent and reliable (Gibson et al. 2003).

There are three styles in recent research associated to age stereotypes. Primary research is gathering on the content of stereotypes in a number of countries. For example, a study of personnel managers, (Gibson et al. 2003) found that older workers were perceived as more stable, knowledgeable and having more individual initiative than younger personnel.

In contrast, younger workers were perceived as having better potential for expansion than older workers. A survey of respondents from Saudi Arabia, (Smith 2001, 56) found confirmation of these negative stereotypes about older employees' interest in training and their aptitude to change and learning of new skills. Though, older workers were perceived to be more dependable, have better interpersonal skills with additional useful experience and to be more trustworthy. In a study

of personnel managers and directors, Taylor and Walker (2004 98) reported that although employers appear to be developing a more positive attitude to older workers, they still perceive the latter as difficult to train and as having more problems adapting to new skills. In addition, there were a number of attempts to evaluate older worker stereotypes across countries, for example, (Smith 2001, 56) contrasted and found a few differences in the age-related stereotypes of persons in UAE and the Saudi Arabia. In the same way, (Smith 2001) found both similarities and differences in the attitudes people held toward older non-managerial workers in Saudi Arabia. Our evaluation of this literature proposes that older worker stereotypes are ubiquitous and share a number of similarities across a variety of countries. While older workers are generally perceived as more dependable and stable, they are also perceived as more difficult to train, less adaptable and slower to learn.

A subsequent trend in age stereotype investigation comprises calls for and the commencement of examinations into the economic dimensions of age-related stereotypes and awareness. For instance, Finkelstein and (Burke 2008) found that older folks appear as less economically advantageous. This is corroborated by a study of Arab managers conducted by Arrow smith and (McGoldrick, 2006) which found that 47% of those surveyed thought that older workers are more expensive to use. Finally, a review of Saudi employers found that only 28.5% of respondents specified that older workers were more likely to present a better return on investment. (Cummins, R. 2005).

A third style in the age stereotype investigation is a sustained exploration of any background factors (e.g. individual, organizational, and decision-related) of attitudes toward older workers and older worker stereotypes. For instance, (Chiu et al. 2001) inspected the degree to which organizational issues (organizational size, kind of industry, having an equivalent opportunity strategy that specially referenced age) influenced attitudes that people held concerning older workers. They found that only one organizational issue, the continuation of an ageism policy, influenced older worker stereotypes. A great deal of the existing study has focused on individual-level factors, mainly the role of rater age. The study by Chiu ET al. 2001) symbolizes one of the few research efforts that believe in the influence of background variables at manifold and higher levels of investigation (country, organization) (McGoldrick, 2006).

### **3.5.2. Age, Recruitment and Selection**

Sullivan and Duplaga (2007) noted that studies on the effects of age on employment decisions have consistently found a bias in favour of younger applicants. Relatively few respondents to surveys report targeting older workers in recruitment. Moreover, there is some evidence that older job searchers face more obstacles than younger job searchers. For example, older job searchers take longer to find jobs and have to take pay cuts when they find them. Although a review of the literature exploring the role of age in access discrimination appeared toward the end of the 2002s,

relatively little Arab-based research has been conducted since that time. Bendick et al. 2003 found that older confederates applying for real entry-level sales and management jobs received less favourable responses from employers 41.2% of the time compared to younger and equally qualified confederates. (Cummins, R. 2005).

We have two overall observations about recent Arab-based research exploring the role of age in recruitment and selection. First, relatively little field research has been conducted. Second, much of the recent research that has been conducted has relied on social cognition and social identity theories to make predictions about the context in which age discrimination in selection is most likely. This may explain the limited attention given to organizational and environmental factors that may play a role in age discrimination. Both observations suggest the importance of future research employing multiple and diverse methodologies and exploring a broader range of contextual factors (Sullivan and Duplaga 2007).

In contrast to Arab-based research, relatively little experimental research exploring the effects of age on recruitment and selection has been conducted outside the United Arab Emirates. An exception is a study by van (Beek et al. 2007) which manipulated attributes (including age) of fictitious job applicants and studied the effects on Dutch managers' selection-related judgments. They found significantly lower preferences for older compared to equally capable younger applicants. The majority of recruitment and selection research that has been undertaken outside Saudi Arabia has involved large-scale descriptive surveys of personnel and line managers' attitudes about older workers and reports about employers' policies toward older workers.

### **3.5.3. Age, Performance and Performance Evaluation**

Research on age and job performance in the workplace has traditionally focused on actual decline in physical and mental abilities as a function of age and the role of stereotypes in performance evaluations of older workers. (Warr 2004) concluded that, 'the overall finding from more than 100 research investigations is that there is no significant difference between the job performance of older and younger workers'. In addition, (Warr 2004) noted that differences within age groups typically exceed average differences across them. Although the majority of studies that have been conducted have assessed performance using supervisors' ratings, a number of studies have explored actual job performance.

A review of the latter indicates that job performance typically increases up to the age of 44 then continues to increase, plateaus or declines slightly. The lack of an *overall* relationship between age and job performance may be explained by the fact that although age is related to declines (e.g. response speed, working memory), these may be offset by other factors (e.g. experience) and they are likely to occur after the age at which people retire from the workforce.

Recent studies have considered the role of context in the age-performance relationship to a greater extent. A number of studies exploring issues of age and job performance have relied on theories of organizational demography. Research exploring the effects of demographic background on work behaviours and attitudes takes a compositional or relational demographic as compared to a categorical approach. While a categorical approach explores the direct effects of an individual's age on job performance, a compositional approach considers the demographic make-up of a group and a relational demographic approach considers the relative demographics of an individual and the group or an individual and another individual. Both compositional and relational demographic approaches argue that demographic similarity leads to attraction and favourable treatment whereas dissimilarity results in less favourable perceptions and treatment (Warr 2004).

Organizational demography research (compositional and relational) has studied age as one of a number of demographic factors. For example, (Webber and Donahue 2001) conducted a meta-analysis exploring the effects of work group demographic diversity on cohesion and work performance. They suggested that while work group diversity on some demographic dimensions (e.g. functional background) is likely to be relevant to the work group's task and therefore to positively influence group performance, other demographic dimensions such as age are less relevant to group tasks and are expected to have little influence on group performance. Results revealed that there was no overall relationship between demographic dimensions that were less job related (including age) and work group performance. Although there is some evidence that age similarity influences group processes (e.g. emotional conflict), these processes tend to have little effect on work group performance (Webber and Donahue 2001).

Other researchers have explored the effects of demographic similarity between supervisors and subordinates on task performance and extra-role behaviour primarily using field study methodology. For example, (Liden et al. 2006) explored the effects of the age of sales representatives and their supervisors on both objective (e.g. average number of calls to retail outlets per day) and subjective measures (supervisors' ratings) of performance. They found that older employees performed better than younger employees on objective and subjective performance measures and subordinates of older supervisors outperformed subordinates of younger supervisors on objective performance measures. However, age similarity did not significantly predict objective or subjective performance ratings. Tsui and O'Reilly (2009 765) similarly found no evidence that the age similarity of supervisors and subordinates positively influenced performance ratings (Liden et al. 2006).

While there appears to have been some research attention to the relationship between age and performance, our review of more recent literature supports (Clapham and Fluor's, 2007) observation that 'there is a dearth of empirical research addressing the specific relationship

between age and promo ability'. Based on a survey of employees and managers in a large multinational firm, (Shore et al, 2003) found interactions between manager and employee chronological age consistently predicted performance and promo ability. For example, younger managers evaluated younger employees more highly on potential and promo ability than older employees, while older managers evaluated older and younger employees similarly.

#### **3.5.4. Age, Training and Career Development**

In today's rapidly changing workplace, continuous training and development is essential for organizational competitiveness. Those who do not update their skills may experience negative career consequences. Against this backdrop, there is evidence that older workers receive less formal training and career counselling than younger workers. However, as Maurer and Rafuse (2001) pointed out, it is difficult to determine whether age differences are the result of employers' differential treatment of older workers or older workers' self-determined behaviour.

Age differences in training may be due to differential access provided by employers. Some suggest that differential training access and treatment represents bias against older workers. As noted earlier, older workers are often perceived as less receptive to new ideas, less innovative, less future oriented, resistant to change and harder to train than younger individuals. In a study of MBAs, (Greller 2000) found evidence of age norms suggesting that people are expected to be less concerned with the development of new skills as they age. These stereotypes and age norms may play a role in the training gap. Relatively little empirical research has assessed the extent to which differential treatment contributes to age differences in training access. Further, there is some evidence that companies report spending more money on training younger than older workers and older workers may be given more routine job assignments which in turn provide fewer opportunities for development (Greller 2000).

It is important to note that some argue that employers' provision of younger workers with greater opportunities for training and development than older workers is not a function of bias. Therefore, this theory suggests that decisions to provide younger rather than older workers with greater opportunities and resources for training reflects rational and not biased decision making. However, some authors have called into question a number of the basic assumptions of human capital theory and find evidence that is not entirely consistent with this theory. Evidence that turnover among older workers is low, that the life of skills tends to be short, and that younger workers in fact tend to leave or to be poached by competitors, calls into question the professed inability of employers to recoup their investment in training older workers. This type of research may help us determine the extent to which training outcomes are based on biased versus rational decisions (Greller 2000).



A second explanation for differences in access to training experienced by older and younger workers is that employees are less inclined to participate in training and development activities as they get older. Human capital theory suggests that older employees have disincentives to invest in their own training for the same reasons that employers do. Consistent with this, using archival data, Simpson et al. 2002 found that participation in general skills training declined with age. However, they also found that older workers were more likely to participate in training targeting the development of focused occupational skills (e.g. targeted career and job-related courses) than younger workers, suggesting that current economic models may be too simplistic. R is an important factor influencing whether individuals update their skills. However, negative stereotypes may reduce older workers' confidence and motivation to participate in training and development opportunities and take on challenging work assignments. Some authors have suggested that organizational factors may also influence individuals' willingness to engage in development activities.

Another topic of interest in the literature is the relationship between age and job-related training performance. Specifically, the use of lecture, modelling and active participation methods positively improved the training performance of older learners. In addition, training that occurred in smaller groups or that allowed for self-pacing was also positively associated with training performance. Evidence of age differences in training performance has led to suggestions for developing training programs (e.g. longer training times) that may be beneficial to all workers, particularly older workers. However, organizations tend not to adjust their training as a function of trainee age (Maurer 2001).

Consistent with Arab-based research, research conducted outside of the Saudi Arabia also reveals that there are fewer training opportunities for older compared to younger workers. For example, a study of Dutch supervisors found that older employees tended to hold jobs in which there were fewer opportunities for learning and development. In addition, older employees received less training than younger employees. (Taylor and Walker 2004) reported that 13% of Arab respondents did not train management past the age of 50 and that 17% did not train other staff past the age of 50. Similarly, in their study of Arab managers, Gray and McGregor (2003 65) found that 40% of those aged 55 and older reported receiving no training within the previous 12 months compared to 18% of those under 35 years of age.

In separate surveys of Saudi Arabia employers and employees aged 55 and older respectively, Gray and McGregor (2003 65) reported a gap between what employers espoused and what employees reported they received with respect to training opportunities. Finally, Williams, K. Y. and O'Reilly, 2008 noted that there is a negative relationship between age and participation in job-related training, but that age differences are relatively modest. As was the case in the Arab literature, relatively little research outside the Saudi Arabia has explored issues of career

development and age specifically. An exception to this is Williams, K. Y. and O'Reilly, 2008 study of senior Canadian public sector professionals that suggests that organizations' training and career development practices may influence the extent to which older individuals feel their work aspirations can be achieved in their current organization. These latter perceptions can in turn affect job outcomes such as job satisfaction and organizational commitment.

### **3.5.5. Age and Exits from the Organization**

There are a number of ways in which employees exit organizations. Three in particular have received considerable research attention in recent years: voluntary turnover; involuntary turnover (e.g. layoffs/downsizing); and retirement. In his review of the literature, Warr (2004) concluded that voluntary turnover is lower among older compared to younger workers. However, a meta-analysis conducted by Healy, Lehman and McDaniel (2005 19) found that the relationship between age and voluntary turnover was small and near zero. In contrast to this evidence, many have suggested and found that older workers are likely to be targeted in downsizings and layoffs due to negative older worker stereotypes (e.g. older workers are less adaptable to change), the fact that they tend to occupy mid-level positions that are often the focus of downsizing, and due to slow company growth. Based on a study conducted by *Money Magazine*, Simon (2006 90-98) reported that more than 16% of 55-64 year old workers were downsized or laid off between 2001 and 2003, an increase of 5% from the early 1980s. In contrast, the percentage of workers aged 20-24 decreased from 19% in the early 1980s to less than 16% between 2001 and 2003. In addition, displaced older workers took longer to find jobs and those finding jobs often had to take reductions in pay. Similarly, Chan and Stevens (2001 68) found that job loss (i.e. involuntary separations) at age 50 or older significantly reduced the future employment probabilities of older workers (Williams, K. Y. and O'Reilly, 2008).

The majority of recent research exploring the relationship between age and organizational exits outside of the Saudi Arabia provides evidence that older workers are more likely than younger workers to be targeted for redundancy and focuses on trends toward early retirement. First, several researchers in the Arab sector observed that older workers were more likely than younger workers to be made redundant in the late 1970s and early 1980s. In addition, the negative impact of redundancy was greater for older than younger workers. Williams, K. Y. and O'Reilly, 2008 suggested that employer attitudes played a significant role in these redundancy decisions and were reinforced by public policy that encouraged redundancy among older workers. In a more recent survey, 58% of managers indicated that they employed downsizing strategies targeting older workers and 54% indicated that older employees would be more likely to be made redundant in their organizations because of their age. It is important to note that the existence of age discrimination laws in the Saudi Arabia and their current absence in the rest of the Arab world would make it difficult to employ similar research methodologies in the United

Arab Emirates. Arrow smith and (Williams, K. Y. and O'Reilly, 2008) findings are consistent with Van Dalen, 2002 observation that older workers in Australia were more likely to be targeted for redundancies during the spate of downsizings that occurred in the late 1980s and early 2002s.

The overwhelming majority of recent research and writing outside of Saudi Arabia, documents and discusses the trend toward early retirement and the implications of this trend for public policy. In their survey of personnel directors and managers in Arabia, Taylor and (van Beek, K. W. H. , Koopmans, C. C , and van Praag, 2007) found little evidence that male respondents worked past the state pension age of 65 years. Much discussion has been given to how public policy in many Arab countries traditionally supported early retirement. However, in light of the aging of the workforce and reduction in the number of younger entrants, governmental policies across Europe and elsewhere are increasingly changing to encourage older workers to remain in or reenter the workforce. For example, a number of countries have made eligibility for early retirement more difficult, increased retirement age, provided financial incentives to employers who employ older workers (e.g. Maldives, Urdan), and experimented with delayed retirement. These changes are largely driven by concerns about cost pressures on public pensions and retirement funds. Many authors discuss the effects of current public policies and make suggestions for policy changes (e.g. encourage the use of gradual retirement schemes). For example, (van Beek, K. W. H. , Koopmans, C. C , and van Praag, 2007) explored the extent to which two different early-retirement policies (traditional versus more actuarially neutral) might influence the age at which Dutch respondents' retire. The traditional scheme was one that encouraged early retirement with most firms fixing the early-retirement age at 60 and providing up to 80% of the gross wage, whereas the newer early-retirement scheme was intended to discourage early exit from the organization by equating time accumulated at work with the retirement payout. (van Beek, K. W. H., Koopmans, C. C, and van Praag, 2007)

Some authors have noted that trends toward early retirement have been supported not only by public policy, but by organizational policies and the expectations and attitudes of many older employees themselves. Organizational policies may not support recent governmental attempts to increase the work life of older employees. There is little evidence that employers are taking steps to encourage later retirement and may actually prefer retirement at lower ages. For example, despite government pressures, Dubai firms have been reluctant to increase mandatory retirement ages due to concerns about the costs of employing older workers. Moreover, Taylor and Walker (2004 72) reported that more than two-fifths of respondents had voluntary early-retirement systems in place. In a study of Dutch supervisors, Henkens (2000 96) reported that a third indicated that they wanted all of their older subordinates to stop working upon reaching early-retirement age (60 years). In addition, some research has explored factors (respondent age, job

requirements, organizational context, and expectations about older workers' performance) that may influence peoples' perceptions about appropriate retirement ages.

There is also evidence that older workers seem to prefer early retirement. Most Dutch organizations use 60 as their minimum age of retirement. However, a study of Dutch residents indicated a preference to retire at an average age of 58.6 years if they could choose their retirement date freely. Research in Europe and Dubai finds that in addition to external factors (e.g. public pension plan, wage system), internal factors (e.g. health status, financial security, family status) also influence older workers' retirement decisions. (van Beek, K. W. H. , Koopmans, C. C , and van Praag, 2007).

### 3.6. Theories on Workforce (Employee) Motivation

#### 3.6.1 Maslow's theory of motivation

Maslow's theory contends that man has five basic categories of needs which are ranked and satisfied on a hierarchy ranging from lower-order to higher-order needs - first the physiological needs, followed by safety and security, affiliation, esteem and self-actualisation needs respectively.



Figure 3:6 Maslow's Hierarchy of Needs

Although Maslow's theory is intuitively appealing, various criticisms have been levelled at it. (Dixon, 2003) for instance, is of the opinion that Maslow did not provide sufficient empirical substantiation for his theory. (Dixon, 2003) concluded from a review of seventeen studies that no conclusive evidence has emerged to support two central aspects of Maslow's theory. Firstly, that no evidence emerged that human needs are classified in five distinct categories, or that these categories are structured in any special hierarchy (Steers & Porter, 1991). Secondly, that lower-level needs must be satisfied before higher-level needs are activated. A central aspect of Maslow's theory, namely the progressive satisfaction of needs on a hierarchy from lower-order to higher-order needs (in other words, need-progression), is thus questioned. (Dixon, 2003) Productive and professional performance quality is determined by the level of self-esteem of an employee.

According to Boshoff & Arnolds (2002), a significant influence is exerted by a person's esteem in the capacity of personality variable on the work performance of all employees whether they are managers or lower staff. Employees having high levels of self-esteem are generally prone to higher levels of professional excellence with motivated approach. These are the people who can be termed as change agents as they beat the organizational goals and expectations together with a desire to implement positive changes in the work environment (Dixon, 2003).

Another leading element for increased job performance is the acknowledgement of efforts put forward by employees. Research shows that increased acknowledgement generally leads to higher levels of job performances; thus beating the organizational goals. Additionally, (Farh, Tsui, Xin, K, 2008) states "a well-timed thank you or recognition can increase production remarkably. This shows that appreciation from management is one of the vital factors in increasing the work performances of the employees. Thus, lack of acknowledgement of employee efforts can lead to decreased work performance which in turn results in de-motivated employees. Therefore, it is the responsibility of management to recognize and appreciate the efforts of employees so as to maintain a positive and healthy working environment. The type of self-esteem is affected by the perception of employees regarding their authorities' vision about their efforts. This results in increased motivation of employees for their job performances. (Farh, J. , Tsui, A. S. , Xin, K, 2008).

Job-level ascendance and need-progression have been related by various research studies. According to these studies, employees at lower levels of organizational hierarchy generally make efforts to satisfy the lower order needs i.e. affiliation, security & safety and physiological. On the other hand, employees at higher levels of organizational hierarchy are generally interested in satisfying the higher order needs i.e. self-actualization and esteem. This proposition of need progression was rejected by a motivation theory proposed by (Farh, J. , Tsui, A. S. , Xin, K, 2008) in his ERG theory. According to this theory, there are various groups of core needs which motivate a person. These are Relatedness, Existence and Growth needs. As discussed earlier, Alderfer rejected the proposition about level-by-level progression of needs.

Hierarchy of needs was proposed by Maslow in 1954 who asserted that there is a hierarchy in which needs of human beings are arranged. And human beings are motivated enough to satisfy their lower level of needs, in the first instance. On the satisfaction of first level needs, these needs do not remain motivators and the person is moved to next level of needs in hierarchy. Basic needs (food, shelter and warmth) exists in the first level, which then leads the person to next level i.e. physical wellbeing, social acceptance, self-esteem, to "Self-actualization"

### 3.6.2 Herzberg's theory of motivation

According to Herzberg (1959), hygiene factors are also very essential factors for satisfaction of an individual and should be dealt adequately. He further emphasized that there is another factor which makes the employees work productively and these are called 'motivator factors' like enriched jobs. (Barth, M. C , McNaught, W. , & Rizzi, P. 2003)



**Figure 3:7 Herzberg's Two-Factor Theory**

According to theory X, there is a general view that people show reluctance in working at their workplaces. This theory was opposed by McGregor (1960) by proposing Theory Y. According to Theory Y, people are not reluctant to work but they have a need for satisfaction and achievement from their efforts to perform on the work platform. Needs for power, achievement and affiliation was emphasized by McClelland in 1967. According to his views, employees have these needs and they all want to satisfy these needs by performing with excellence at their work (Finkelstein, 2008).

All the above theorists were considered to be the Gurus of management of the 20<sup>th</sup> century. They all have elaborated their concepts in a very simple and defining way. All the logics and results were based on the practical aspects of life. For example, in Maslow's Needs Hierarchy, we can see that most of the working people in the West are not motivated by money but they satisfy their basic needs. Money can be used to buy basic necessities but it cannot buy affection, relationships and self-esteem. Those managers who follow Maslow's theory are generally seen to provide excellent work, satisfactory relationships and better opportunities for fulfilment of self-esteem and self-actualization.

Those employees who follow theory of Herzberg are seen to have the opinion that money is not the best motivator but the best motivator is job enrichment. These concepts helped them to clarify

the misunderstanding that people are reluctant to work and are lazy enough to be pushed to work only by incentives or threats. On the other hand, they realized that people are generally interested in doing a good job which provides them with the inner satisfaction that they have done their job well. The only important thing is that people should be provided with opportunities and environment to perform their job with excellence; which satisfies their power, achievement and affiliation needs (Finkelstein, 2008).

Talking about the case studies of 1970's organizations, it can be said that these organizations worked on the concepts described in the theories of different researchers. The belief and the efforts of those organizations led us all to realize the importance of Hierarchy of needs by Abraham Maslow. Before this concept, organizations were having programmes related to enrichment of job, and as a result, most of the working man-power were unable to be retained. Additionally the human relations programmes resulted in decreased output. There were companies which stopped their incentive payment system due to their inability to manage the overall process. This was just because of the lack of commitment of these companies to the programmes which they were running. At the same time, there were some other organizations in the market which achieved very positive results from these programmes because they were committed to their programmes and they own them (Nelson, B. and Bridges, K. 2005). It is very important to understand the factors behind the motivation of employees and these factors should be the basis of any compensation or remuneration program. This is the only way to make that program effective and fruitful. This concept seems to be very easy to understand and implement but so far, we have seen that organizations are unable to base their reward and compensation structure on motivation theories (Finkelstein, 2008).

There are a few principles, which should be considered by the top management of the firms, when making decisions regarding reward management strategy such as:

1: INVOLVEMENT: Firms should implement a decentralized policy for reward management. It means that whenever the decisions on reward strategy are formulated, potential employees should be taken into confidence. The benefits and drawbacks of the new reward management approach should be duly communicated to the employees, enabling them to concentrate on their work behaviour without any hesitation or concern on what they would be getting after their job is done. The new approach can be communicated by delegating tasks and responsibilities upon employees; followed by a proper assessment of their work. (Forteza, J. & Prieto, J. M. 2004)

2: DEMOTIVATORS: A monotonous nature of work is one of the major factors that negatively affect employees' performance. Employees do get frustrated and stressed due to complexity and longevity of work. They need change. Companies should implement such strategies that can provide employees opportunities to excel in their field of expertise. All the potential problems faced by the employees should be addressed on high priority so as to restore their confidence

within the organization. This is really essential, because removing work-related hassles will result in increased productivity, which should be appropriately appreciated in the form of incentives and rewards. (Nelson, B. and Bridges, K. 2005)

3: **EQUITY:** It is a fact that gender discrimination is one of the most debated issues in the organizational context. Male employees tend to get higher salaries when compared to their female counterparts. To address this prevailing issue, organizations should discourage any discriminatory policies and practices. All the assessments should be fair, without any consideration of an employee's gender orientation, his or her racial or linguistic background. The provisions of the equal employment opportunity act should be implemented in a true sense so as to avoid any misunderstandings related to reward strategy. (Forteza, J. & Prieto, J. M. 2004)

4: **REINFORCEMENT:** Before implementing any reward strategy, the employees should be taken into confidence. The organizations should encourage employees to share their ideas and feedbacks in relation to improvement of working environment. They should be given a sense of involvement when making policy decisions on important matters, such as remunerations and salary benefits. The employees should be told to follow a proper procedure and abide by the rules and regulations prevailing in the organization. Such policies should be enforced, which will harness a sense of security, responsibility, consistency in performance, which should then be rewarded in the most suitable manner (Nelson, B. and Bridges, K. 2005).

Organizations tend to change policies with the passage of time. Similarly, policy on remuneration packages also changes and it is a regular practice, which should continue. Stagnant reward strategies with no incentives for the potential employees tend to trigger a negative feeling among them. This is why employees get frustrated. It is big mistake on the part of the organizations, not to change remuneration strategies. It is important to consider frequent revisions in reward strategies so as to help the cause of employee motivation, which will eventually result in retention of trusted employees (Forteza, J. & Prieto, J. M. 2004).

### **3.6.3 Remuneration and employee motivation**

The debate on the impact of remuneration on employee motivation is still in progress today. Some managers believe that the performance of an employee is largely dependent upon monetary rewards. However, when interviews were conducted with some employees from different organizations, it was found out that job motivation is highly dependent on intrinsic rewards like status, respect, acceptance and achievement. These intrinsic rewards are very closely linked to the motivation as well as performance of employees. (Anders L. 2004)

A cursory glance at articles on motivation published by management consultants suggests that many consultants are led in their advice to managers by diverse need theories such as those



proposed by Maslow, Herzberg, McGregor and McClelland. Although it seems that need satisfaction is one of the most vital elements in employee job performance, managers are still unable to unite on any one motivation theory which can be said as the basis for employee motivation. Thus, it is absolutely essential to identify a theory which can serve as a basis for employee motivation throughout the organizational hierarchy. It is also recommended to find out whether the existing theories on motivation are valid in today's organizational environment. The basis for motivation of employees are intrinsic factors (whether in a professional or personal setting) which are acquired by personal experiences thus rooted in core psyche of an employee.

On the other hand, extrinsic factors generally help an individual to adapt and modify the intrinsic forces resulting in enhancement of professional as well as personal incentives. These extrinsic factors serve as motivators for individuals. Esteem is an individual's perception about himself and it serves as a vital motivating force in any professional setting. The job performance of any individual is greatly affected by organizational mix i.e. in which position; the person is falling in that mix. Financial incentives and gains also affect an individual's extrinsic drive which is necessary for adopting situational model. Extrinsic motivation of an individual is also determined by the self-actualization need, which is the result of self-respect and personal satisfaction that the targets and goals have been met. (Anders L. 2004)

The present section focuses on the need theory of motivation as espoused by Maslow (1943), because it is one of the most widely used motivation theories (Stahl, 1986: 39) and on the ERG theory of Clayton Alderfer (1969), because it was one of the first empirical assessments of some of the basic premises of Maslow's theory with the aim of improving the latter. (Dixon, 2003) The question of whether the Alderfer theory is indeed an improvement on Maslow's theory therefore needs to be investigated. David McClelland's achievement theory (1962) is unique, as it is the only theory that highlights the achievement need as a learned need (all persons therefore possess it) and the only theory that specifically links this need to job performance and the economic prosperity of people and countries.

The need for achievement is one of the esteem needs of Maslow. To summarise: the present study focuses on the above-mentioned theories to ascertain whether the needs proposed by Maslow and Alderfer are indeed the main motivators of employee job performance and whether all employees are motivated by the satisfaction of the need to achieve. (Dixon, 2003)

### **3.7. Conclusion -Literature review**

This chapter outlined some theoretical constructs that surround the aging workforce challenge in the oil and gas industry and in Aramco in particular. The practices and challenges of an aging workforce in the global oil industry are most pronounced in the upstream sector of the industry. Thus, organizations are considering options to address these. Like in the 90s when oil prices

dropped and companies resorted to laying off staff in order to reduce costs, companies today do not want to be caught in such situation where they will have to scout for staff when oil prices go up. This has left the companies with aging workforce.

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## 4. Chapter Four: Descriptive Theory (Research Findings)

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### 4.1. Introduction

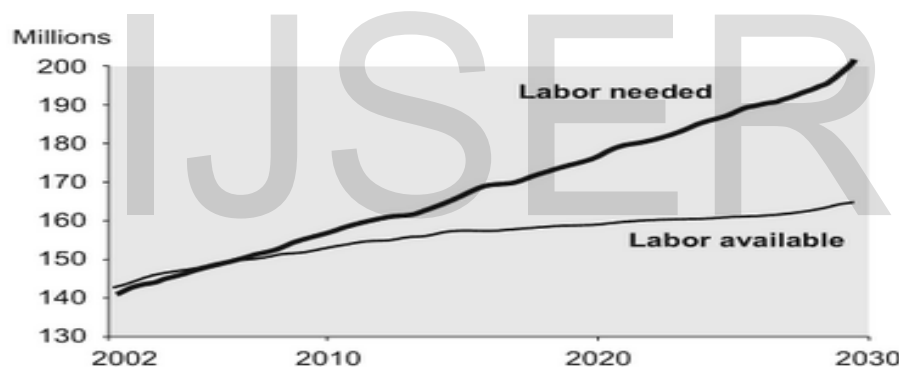
This chapter develops its structure from chapter two where the research methodology was developed. In this chapter, the findings of the research are outlined. The researcher deliberately decided to be systematic by following the research questions as a guide to this discourse of findings from the research. Each research question was answered by use of data from the research findings.

### 4.2. Impact of aging workforce on oil and gas industry globally

#### Research question 1:

*To what extent is the aging workforce challenge affecting the global gas and oil industry?*

As has been discussed in chapter three, the shortage in labour supply by the year 2030 is highly likely by looking to the trends as shown by Leibold and Voelpel (2006) in the figure below.



An analysis of such a trend however, would only be significant by looking to what is being done to thwart this trend. At global level much study has been done about this subject and several suggestions have been put in place such as:

- Improved talent management strategies
- Government offering incentives to companies hiring workers above 45 (e.g. France)
- Improvement of health provision facilities, and many others.

### 4.3. The significance of the aging workforce challenge at Aramco

It was necessary to study the significance of the aging workforce at Aramco so as to render this study relevant. In finding the relevance of this challenge, the researcher looked to both primary and secondary data about Aramco.

## **Research question 2:**

### ***To what extent is the aging workforce challenge significant at Saudi Aramco?***

In answering this question, the researcher decided to look at a number of factors such as the productivity of the aging workforce and to what extent Aramco benefits from such workforce. The question is aimed at finding the role of an aging workforce in increasing productivity at Aramco. The researcher looked to the significance of the impact of the aging workforce at Saudi Aramco operations.

To answer this question, 16 items were faced to the target group and these questions are shown in Table 4.1 measures the influence of aging workforce on Saudi Aramco operations. The factors considered were:

- 1- Productivity of aging workforce, this factor gives an indication about the actual effects of the aging workforce from employees' perspective.
- 2- The importance or relevance of the aging workforce, where they may have unique experiences and special skills that cannot be achieved from the young workforce.

Table 4.1 shows that a large number of respondents valued the input of the older workers in Aramco. Several factors were identified why this older workforce was of special importance such as their ability to foster productivity, their possession of abundant experience and their generally high level of organisation.

**Table 4:1: Findings on productivity of aging workforce at Aramco**

Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Comment
20%	3%	0	6%	71%	The aging workforce contributes in fostering productivity.
9%	7%	0	21%	63%	The aging workforce has experience enough to solve problems and mitigate risks
2%	6%	0	39%	52%	The aging workforce has a high level of capability & competence for productivity.
6%	2%	1%	37%	54%	The aging workforce is of high-quality productivity
5%	1%	0%	53%	41%	The aging workforce is a true capital of the company.
4%	1%	0%	21%	75%	The aging workforce is distinctive for being able to use the different types of equipment.
6%	11%	0%	2%	81%	The aging workforce is distinctive for being able to be organized
10%	37%	0%	18%	35%	Most successful companies retain its aging workforce.
2%	4%	0%	11%	83%	The aging workforce is distinctive for being able to evaluate using long years of experience.
14%	1%	0%	8%	77%	The aging workforce is distinctive for being able to guide and instruct new recruits.
20%	51%	0%	6%	23%	The aging workforce uses modern technological tools and skills better than the new graduate's young workforce.
23%	48%	0%	8%	21%	The aging workforce can understand the young workforce.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Comment
0%	6%	0%	30%	64%	The aging workforce contributes to gain high profits for the company.
1%	9%	0%	3%	87%	The aging workforce is distinctive for being able to deal with different kinds of mediators.
7%	17%	0%	6%	70%	The aging workforce stands opposite to the capabilities of the young workforce in Saudi Aramco.
1%	5%	0%	11%	83%	To have an aging workforce at Saudi Aramco is an intellectual resource backstop

Source: research findings

### **Research question 3:**

#### ***What are the implications of the aging workforce for Saudi Aramco?***

In order to find solutions for this question, the extent of utilization of workforce was studied in the second domain in the questionnaire. This question was aimed at finding the extent that Saudi Aramco was benefiting from the productivity of its aging workforce.

This section contained 10 items as indicated in Table 4.2 below. The responses to the items are also shown in Table 4.2.

**Table 4:2 Productivity of Aging Workforce at Aramco**

Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Comment
20%	51%	0%	7%	22%	The aging workforce supports the young one through its extended experience and knowledge.
2%	4%	0%	10%	84%	The aging workforce needs to utilize information technology in order to enhance productivity.
24%	49%	0%	6%	21%	The aging workforce contributes to experience transfer to the new staff.
2%	4%	0%	30%	64%	The aging workforce seeks to realize the administrative justice
4%	1%	0%	21%	75%	The aging workforce contributes to increase profits through the utilization of their wealth of knowledge.
6%	3%	0%	38%	53%	The aging workforce uses strategic plans to foster the company productivity.
10%	37%	0%	18%	35%	The aging workforce recognizes how critical the young workforce is to Aramco's retirement plans.
2%	6%	0%	39%	52%	The commitment level of the aging workforce in Aramco compared to the young ones is higher.
9%	7%	0%	21%	63%	The aging workforce realizes the significance of time to Saudi Aramco.
2%	8%	0%	3%	87%	The aging workforce contributes in drawing policies organizing workers performances in Saudi Aramco.

Source: research findings

Table 4.2 shows the findings suggesting that the aging workforce was very useful to Aramco as it provides useful input in such activities as drawing policies and delivering organisational competitiveness through their vast knowledge.

#### 4.4. Saudi Arabia national environment and aging workforce

##### **Research question 4:**

*How does the Saudi Arabia national environment contribute to the aging workforce challenge at Saudi Aramco?*

In this section, the researcher turned to look at the national environment of Saudi Arabia in order to find possible linkages between the company and national environments. Table 4.3 below shows the results from interviews with ten respondents (five experts and five academicians) on the Saudi national environment:

**Table 4:3 Experts' perception of the Saudi Arabia environment**

Question	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Saudi educational system contributes to rapid aging workforce dependence	56%	39%	0%	2%	3%
Saudi national economy is capable of supporting a rigorous education system to mitigate aging workforce trend	23%	32%	0%	27%	18%
Health services have an impact on aging workforce availability	82%	16%	2%	0%	0%
Saudi policies on aging workforce are adequate	6%	14%	1%	35%	44%

The findings from this study indicate that the Saudi educational system could be one of the forces contributing to the aging workforce dilemma in Saudi Arabia. The researcher did not focus on details of how this is so but indications are that the educational system does not seem to provide for the education of the much needed skilled engineers for oil and petroleum industry. There is also a perception that the health facilities in a country are an essential component of the productivity of the older employees. Whether the Saudi economy is adequate to provide for all these needs is something that other researchers could look at in future.

Further findings on the productivity of the aging workforce were from a set of selected items that respondents had to respond on a linkert scale as shown in Table 4.4. The table shows these responses on how the respondents thought the population growth was a factor for the aging workforce.

**Table 4:4 Effect of Population Growth**

	Strongly agree	Strongly	Neutral	Disagree	Strongly disagree
Aging Population increase is a significant problem to Saudi Aramco	41%	53%	0%	1%	5%
The lack of qualified workforce and Bulk of aged workforce	35%	10%	0%	18%	37%
The lack of youth and well-trained workforce.	52%	39%	0%	6%	2%
The lack of experience of planning strategies among the aging workforce.	18%	11%	0%	48%	23%
The lack of organization among the aging staff.	23%	6%	0%	51%	20%
Less work efficiency among the Aging employees	87%	3%	0%	9%	1%
Leakage of capitals abroad through transferring.	53%	16%	0%	11%	30%
The steady increase in the international demand on Hydrocarbon is an additional stress over the company research centre to produce new technologies.	75%	21%	0%	1%	4%
Aging workforce and long leave issues in Aramco.	77%	8%	0%	1%	14%

Source: Research findings

To answer this question the challenges facing Saudi Aramco was discussed based on different points:

1. The effects of population growth on Aramco. This point has multi-dimensions; the effects of aging on increasing the services that are required for the employees such as health insurance, salary increases, and housing insurance, etc.may also affect the level of production.
2. The effects of new technologies which puts additional pressure on old technology and
3. Development centre in Aramco company
4. The effects of expert workforce, if the company depends primarily on this target of workforce.

#### **4.5. Saudi Aramco HR strategy and the aging workforce**

##### **Research question 5:**

*How could the human resource remuneration strategy at Aramcobe contributing to the aging workforce challenge at Saudi Aramco?*

Saudi Aramco employees were asked to respond to what extent they supported a list of options regarding human resource at the company. Their responses are shown in Table 4.5 below:

**Table 4:5 Extent of Support for Various Human Resource Policies**

Remuneration and performance strategy	Strongly supports %	Supports %	Neither supports nor against %	Against %	Strongly against %
Focus on merit philosophy throughout the organization; emphasize individual performance	18	45	23	8	6
Encourage, recognize and remunerate employees for client service and quality	18	36	34	9	3
Encourage, recognize and remunerate employees for innovation and creativity	12	40	32	11	5
Encourage, recognize and remunerate employees for output gains	15	37	29	13	6
Encourage, recognize and remunerate employees for enhancing their own skills or knowledge	12	36	36	11	5
Promote the sharing of both the rewards and risks of business	7	29	37	17	10
Adopt performance appraisal systems using customer ratings	10	25	41	17	7
Provide flexible benefit packages	6	21	40	22	11

The general picture from Table 4.5 is that employees at Saudi Aramco are not very sure whether they need to support some human resource policies that were presented to them as the level of support is not first class.

In Table 4.6, the researcher presented propositions to the respondents about what could be done to make full use of the aging workforce and what could be the resulting consequences of the older employees. Respondents were asked to agree or disagree to the propositions. The table shows that respondents generally agreed that there was something that could be done to obtain greater benefits from the aging workforce.

**Table 4:6 Strategies to benefit from aging workforce**

Item	Strongly agree	Agree	Neutral	Disagree	Strongly Disagree
The provision of attractive incentives environment for the aging workforce.	89%	10%	1%	0%	0%
Benefiting from old age benefit fund and investment possibilities of the UAE	21%	70%	3%	6%	0%
Conducting training courses to bring the aging and young workforce together.	93%	7%	0%	0%	0%
Aging and Personal health problems	91%	5%	0%	3%	1%
Apprentice the young workforce to training courses in different companies.	58%	26%	0%	16%	0%
Aging and Stress due to rapid changes in technology	86%	14%	0%	0%	0%



Item	Strongly agree	Agree	Neutral	Disagree	Strongly Disagree
Aging workforce creates a challenge for employers	78%	22%	0%	0%	0%
Corporate policies hinder efforts to adapt to the aging workforce within Saudi Aramco	81%	19%	0%	0%	0%
The challenges of leveraging aging workforce	94%	16%	0%	0%	0%
Aged workforce and Workers who worked for many employers	88%	12%	0%	0%	0%
Clarifying main duties to the employees in Saudi Aramco	43%	56%	0%	1%	1%
Aging and Declining physical capabilities/energy levels.	72%	28%	0%	0%	0%
remuneration for aged employees	95%	5%	0%	0%	0%
Supervising the functional relationships fitting the quality and intellectual level of aged human resource.	93%	7%	0%	0%	0%
Providing information systems and communication channels that realize communication among the organization parts internally and aboard externally.	86%	14%	0%	0%	0%
Measuring and evaluating the performance of aged human resources.	90%	10%	0%	0%	0%
Aging and Support an elderly family member	87%	13%	0%	0%	0%
Saudi Aramco has to meet the lack of qualified human resources by recruiting the best staff via Internet.	89%	11%	0%	0%	0%

#### 4.6. Conclusion – research findings

In this chapter were presented findings from the research that involved primary data using questionnaires at most although interviews were also used. The general picture is that some clues to the research questions seem to be emerging which will need to be broadened in the next chapter as they will be explained and analysed. The findings generally show that the aging workforce problem is serious not only for Aramco but world over. The challenge however becomes significant for Aramco as a company in need of productivity due to its high oil reserves in the world and depending on the aging workforce to a larger extent.

## 5. Chapter Five: Data Analysis

### 5.1. Introduction

This chapter analyses the data gathered from responses to the questionnaires and interviews as shown in the previous chapter. The analysis in this chapter is based on the model shown in Figure 2.3 in chapter two and reproduced here below for further discussion. This chapter critically analyses the data to appreciate the options that would be available to Aramco as it finds ways to tackle the problem. It may be necessary to point out here that the company analysis has been deferred until chapter seven where the SWOT analysis will be done. This was seen to be necessary as a SWOT analysis was seen to be an essential input into the formulation of strategic options by looking at the company's strengths and opportunities.

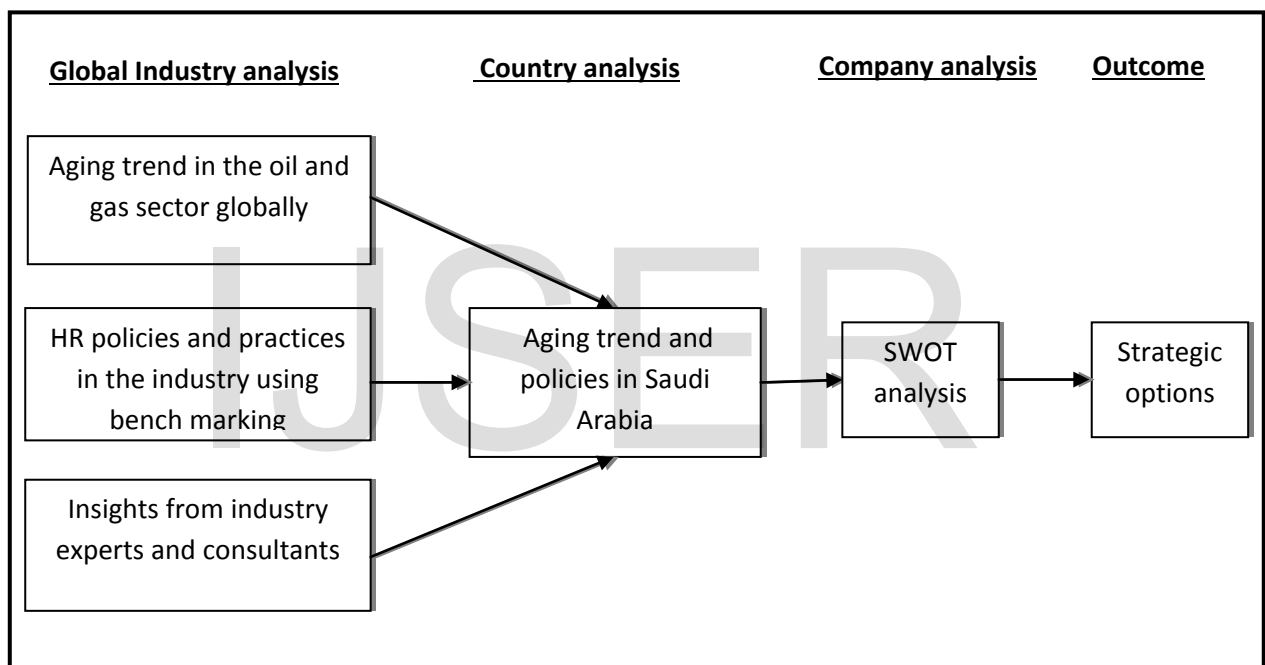


Figure 5:1 Data Analysis Model

### 5.2. Analysis of the significance of the aging workforce challenge

#### 5.2.1. Analysis of Global trends in aging workforce

At the global level, it was found that there was an increasing awareness of the aging workforce challenge as much study and focus was found in literature. Countries like Canada, France, UAE, USA and New Zealand had some measures put in place to encourage older workers to continue working. In some countries such as France and Germany, the retirement age had been a subject of great discussion pointing to the measure that older workers were still needed in the production chain of most industries and national economies. The looming labour supply shortage compared to the available jobs, say by 2030 is painted to be serious by most scholars such as Leibold

&Voelpel (2006). The extent of this may not be rightly estimated in this study as this was not the main focus of the study.

The challenges of an aging workforce may be summarised as shown in Figure 5.2.



Figure 5:2 Challenges of an aging workforce for enterprises (Source: Leibold & Voelpel, p.31)

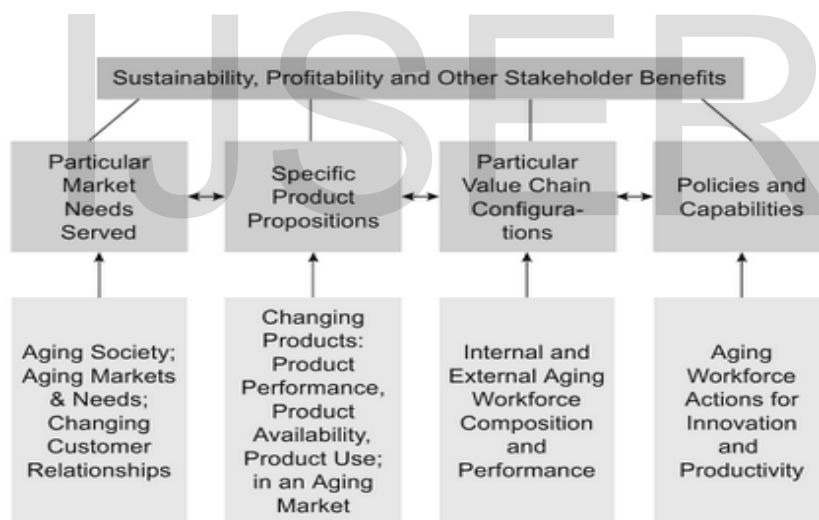


Figure 5:3 Implications of an aging workforce for an enterprise's business model

### 5.2.2. Analysis of aging workforce challenges at Aramco

As found out in section 4.3 from the previous chapter, it appears that the perception for the aging workforce at Aramco is positively indicative that the older workers are very essential to the company's competitiveness in the global economy. Although most respondents' responses pointed to the usefulness of the older workers at Aramco, some respondents did not agree to the assertion that "most successful companies retain its aging workforce" as a total of 47% disagreed. Furthermore, a total of 71% of the respondents disagreed to the assertion that "the aging workforce uses modern technological tools and skills better than the new graduate's young

workforce” while another 71% also disagreed that “the aging workforce can understand the young workforce”. To the researcher, these are significant issues that require further consideration in this study as will be done in the sections to follow.

### 5.2.3. The situation analysis at Aramco

Saudi Aramco is part of the Saudi Society which is not immune to the aging workforce affecting the country. With 85% of its 54,000 employees being Saudi Nationals, it requires that whatever the trend of aging in the Saudi society be given special consideration by the company as it will be affected by the trend. Further, as evidenced by the 2008 Annual Report, the company’s efforts in having its own trained workforce are observable as shown below:

Table 5:1 Number enrolled at year-end 2008 (source: Saudi Aramco, 2008 annual report)

Two-year apprenticeship <sup>1</sup>	4,897	Associate Degree Program Non-Employees	52
College Degree Program (CDPNEs) <sup>2</sup>	1,298	Advanced degree	281
Co-op Students	117	Advanced medical/dental	20
College Preparatory Program	346	Two-year technical diploma	56

1. plus 100 apprentices at SASREF  
2. excluding College Preparatory Program

The company has also continued to make substantial investments in its exploration and producing talent pool, including a project to build a 13,000-square-meter Upstream Professional Development Centre to promote hands-on learning in an intensive, immersive and integrated setting.

## 5.3. Analysis of the Saudi Arabia national environment

### Role of Saudi Arabia Educational System in Aging Workforce Challenge of ARAMCO - Analysing the role of government – E-S-P paradigm model

In analysing the role of government in organisations, Lynch (2009) suggests three factors that are essential as the environment, system and policies (E-S-P) as illustrated in the model below. These factors provide some background information on the environment, system and policies of the country concerned. In this research, the role of the government of Saudi Arabia in attempting to overcome the challenges of the aging workforce is particularly important because of the government’s responsibility to provide policies for education.

**Table 5:2The ESP model of analysing role of government**

<b>Components</b>	<b>Factor</b>	<b>Outcomes</b>
<i>Human resources</i> – rapidly growing unemployment is a major worry <i>Abundant Natural resources</i> Saudi Arabia is the world's dominant oil producer and owner of the largest hydrocarbon reserves <i>Stable Culture and history</i>  <i>Health system</i>  <i>Political system</i>	<b>ENVIRONMENT (E):</b> background characteristics of a country          <b>SYSTEM (S):</b> The country is a monarch          <b>POLICIES (P):</b> the main government policies	The challenge here seems to lie in the acquisition of the necessary skills by the young in order to fit in the available market which is depending on the aging workforce at present          There is an acceptance of this system of government. This powerful government style is in charge of the company and it is possible to direct a lot of attention and resources in the provision of a competitive environment for the company. A number of countries are interested to have business deals with Saudi Arabia because of its economy and good economic benefits. This can be maximised to yield benefits.

The immediate reactions to this analysis of the government contribution could be to see how the education sector may become relevant to the young people and how the older workers may be made more useful. These may be put forward:

- One alternative will be to work longer, interspersed with periods of mid-life education and retraining to maintain employability.
- Significant investment in education will be needed to increase the proportion of the workforce that can be integrated into the global economy.

Saudi Arabia has started a long overdue overhaul of its education system, using SR12.8 billion (\$3.1 billion) into various projects, to make sure that a large number of its students increase their skills as well as their physical, specialized, psychological and academic capabilities. The huge King Abdullah development plan for the Public Education, which was accepted by the committee in June, has allocated SR5.2 billion to advance the quality and the number of education related opportunities and SR4.56 billion for extra-curricular activities. The training and growth of professors is another thrust of the plan and for this purpose, SR3.94 billion has been set aside. A curriculum progress plan will get SR870 million. Scholastic and other specialists are working on the project's administrative plan, which will be prepared shortly. The department will carry out

eight training programs for more than 500,000 teachers, evaluating their specializations, school management, educational supervision, computer science, self-development and betterment of skills. The environment in classrooms will be enhanced through modern technical facilities such as interactive boards, display devices, communication systems and web services.

#### **5.4. Analysis of HR strategies and policies on aging workforce at Aramco**

From the findings shown in Table 4.6 in the previous chapter, it appears that the employees at Aramco somehow associate the company policies with the continuing challenge of older workers at the company. Several strategic options can be derived from the responses of the employees about their perception of the HR policies. All the respondents were agreed on the need to bring the young and older employees together through training programmes. This may be significant as training could provide a level playing field for all employees and provide an opportunity for knowledge transfer.

#### **5.5. Conclusion**

In this chapter the analysis of the study findings was presented. The analysis was carried out in the way it was planned as shown in the data analysis framework. As said earlier on, the company analysis has been deferred until chapter seven. In this analysis, the aging workforce trend analysis was presented together with the significance of this at Aramco by looking at the situation analysis of the company. The company's HR policies analysis was also presented. An in-depth discussion of these analyses follows in the next chapter before defining the way forward comes in chapter seven.

## **6. Chapter Six: Discussion of Findings and Analysis (Narratives)**

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### **6.1. Introduction**

This chapter is a wrap up to what has been presented in the previous two chapters (research findings and analysis). The chapter serves to prepare a way for the development of options or strategic way forward to be developed in the next chapter as it integrates theory from literature review in chapter three. The researcher considers this to be essential as more flesh will be given in here which will act as a basis for developing the options.

From the onset of this discussion, it is observable from the responses given in chapter four that Aramco faces steep challenges with its aging workforce that require prompt strategic measures if the company wants to remain competitive.

### **6.2. Significance of Aging Population increase to Saudi Aramco**

About 24% of the 54,000 workforce at Aramco is said to be 50 years older and above. If looked at from the upstream sector of the company, then the challenge becomes critical.

Aramco is quite aware of the challenges posed by this Aging workforce. Being the largest oil and gas company in the world in terms of reserves, Aramco realizes the knowledge and technology needed to exploit the huge reserve is in short supply due to aging workforce on the one hand and low number of new college graduates (specifically engineering) entering the petroleum industry. As-Saif specifically noted the first driver is due to shortage of skilled engineers and geologists as a result of aging workforce combined with the decline in output of young engineers from the universities interested in the oil and gas sector. He suggested that accessing top students have hence become a notable priority for the industry.

- 87% of the Respondents strongly agree with the fact that the Aging Workforce play a critical role in policy formulation to ensure an organize work environment;
- 52% of the Respondents strongly agree that Aging Workforce is more committed than the young workforce. Similarly, 39% agree with this assertion.
- 53% and 38% respectively strongly agree and agree that the Aging Workforce utilizes strategic plans in its productive work.

Despite the level of productivity being contributed by the Aging Workforce to ARAMCO's activity, 51 and 20 respectively of the respondents think they are not sharing their knowledge with the young ones. 84% also think they need to learn how to use latest information technology (computers) in their work.

### **6.3. HR factors and observationsat Saudi Aramco**

### 6.3.1. Remuneration, work performance and aging workforce at Aramco

Noticeably, a substantial number of human resource management policies on remunerations are supported in Aramco. The focus on value is obvious in that 63 per cent of Aramco employees reported that it was their organization's strategy to either support or strongly support this guiding principle. The level of support for different policies linking remunerations and performance in Aramco shown by the respondents was set out in the previous chapter (Table 4.3). The items are graded in terms of the level of support designate. The rising awareness of the significance of the client is also obvious in the finding that 54 per cent of Aramco respondents noted that their organization had a rule to encourage, distinguish and remunerate employees for client service and class. The support of modernism and originality on the one hand and output on the other was also obvious in that 52 per cent of respondents point to that their organization supported or strongly supported measures to encourage, distinguish and remuneration employees for modernism and creativity, as the similar amount reported that workers were also confident and remuneration for output gains.

Low aptitude of aged workforce in Aramco may be associated with the following:

- Over-difficult tasks.
- Low individual aptitude, skill, and knowledge.
- Proof of strong effort, despite poor performance.
- Lack of development over time.

Employees with low ability may have been badly matched with jobs in the first place. They might have been promoted to a level that's too challenging for them. Or perhaps they no longer have the drive that before helped them to carry out their duties well. There are five major ways to conquer performance trouble linked with a lack of ability. Think using them in this succession, which starts with the least invasive:

- Resupply.
- Retrain.
- Refit.
- Reassign.
- Release.

Aramco employees should be sure to address each of these interference in one-on-one presentation interviews with workforce.

1. Resupply – focal point on the resources given to do the job. Does the workforce have what it requires performing well and meeting expectations? Management should ask them about any added resources they think they require. Listen for points of aggravation.
  - Note where Aramco employees account that support is insufficient.



- Confirm the claims with your own study. People will often blame outside sources for their lower performance before confessing their own mistake.

In another sense, though, the policy in most of the UAE organizations to link remunerations and performance is perceptively lower. It is the case that the support, gratitude and remuneration of Aramco workers for enhancing their skills and information are fairly strong (48 per cent of respondents signifying that this was the strategy in their company). Though, only 35 per cent of respondents point to that it was the strategy of their organization to support or strongly hold the backing of the sharing of both the remunerations and threat of commerce, and only 36 per cent felt that the acceptance of performance assessment systems using client ratings was supported (Sterns, H. L., & Doverspike, D. 2009).

The association coefficients between the variables connected with policies on remunerations and presentation are given. It is obvious that there is a strong collection of particular variables and that this applies mainly to the encouragement, acknowledgment and remuneration of Aramco workers for (1) output gains, (2) Improving skills or knowledge, (3) modernism and originality, and (4) client service and quality. This is clearly indicative of a coherent group of policies on remunerations rising in Aramco are linked with HRM approaches.

So in Aramco, In terms of the 'action' variables, as has been observed, information was required on the degree to which the HRM 'role' was: (1) proactive in shaping and organizing change, (2) active in contributing to strategic preparation, and (3) helpful of horizontal as opposed to vertical organization. It is apparent that a practical human resource management role in shaping and managing change is connected with the sponsorship of various remunerations and presentation rules in the firm. This is mainly obvious in respect of the item with reference to the support, recognition and payment of employees for improving skills or information, but all items are considerably connected to a practical human resource role in the Aramco in shaping and managing transformation. An active participation of the human resource management responsibility in strategic development is also linked with the furtherance of remunerations and performance policies in the Aramco.

Lastly, if the human resource management role assist horizontal management and the development of all human resources (as opposed to vertical management), once more, then a variety of remunerations and performance strategies recognized at Aramco are likely to be endorsed as well. This is relevant particularly to the distribution of both the remunerations and the risks of selling as well as to the support, credit and remuneration of human resources for: (1) improving skills and information, (2) modernization and imagination, and (3) client service and excellence. The most fraction, there are important interrelationships between the major items, and this applies chiefly to those linked with gain sharing. Furthermore, the great relationship between skill-based pay and knowledge-based pay is surely worth stating for, although only the alternative

of Aramco appears to have accepted 'new pay' practices, those that have completed so appear probably to have encompassed further than one practice (Perry, E. L. Kulik, 2003).

In more elements, Aramco having a proactive human resource management role in formulating and managing change, expertise and knowledge-based pay will probably be improved as is equivalent pay for equal work. If the human resource management 'role' contributes in strategic development, a range of remuneration practices such as fringe benefits, payment for excellence, equivalent pay for equal work, executive share systems and profit-related pay are possible to be present in the firm (Perry, E. L., Kulik, 2003).

### **6.3.2. Generation gaps, skills and communication style differences**

The younger generation gets a job soon after their studies, so most of them get their job prior to their internship and any defined training. As Aramco adopts social computing for internal and external communications, it is important to be sure that this articulates a clear social media policy around their appropriate use. The problem is that Aramco workers of different generations tend to view these technologies, and the practices that surround them, differently. It is critical to get workers of all generations on the same page when it comes to using social media and technology at work. (Cleveland, J. N. and Shore, 56-58).

As the younger generation may take some time to get to become productive, the multigenerational workforce issue is not a matter of age. Studies have shown that youngsters can learn and use new devices and software as well as anyone, but it's a matter of fact that it needs some time to get aligned with the aging workforce. In fact, seniors over 65 are the fastest-growing demographic at Aramco today seen the same thing. However, someone who has been working in a job for a long period of time forms certain ideas and habits, reinforced by experience and success. Introduce a new piece of technology, or any new practice for that matter, and the employee will see this as a problem to be solved: "How can I adapt this new tool to the job I already know?" Younger people have the opposite experience. They are well-versed in technologies like social networks, mobile devices, instant messaging and digital content from their experience as students and consumers. (Cleveland, J. N. and Shore, 56-58).

When fresh and young people come to work at Aramco, they may be wondering how they can use the tools they know to solve new and unfamiliar problems in their job. If Aramco does not provide them with the tools they need, or has a policy for blocking tools access to the sites and services that give them access to their knowledge sources and networks, it undermines their potential productivity; it also sends a strong signal that the corporate culture does not adapt to change or welcome new ideas.

The most pronounced difference among generations is the style of communication at Aramco. Generation Y prefers to communicate via the latest technology such as texting or blogging. They

are highly interactive and group-oriented, much like their social preference. Old Generation X is (generally speaking) familiar with recent technology. They feel comfortable using tools such as video conferencing, e-mail and text messaging. Young employees and the Traditionalists differ greatly from their younger counterparts. These more experienced workers still prefer face-to-face meetings and telephone conversations.

Differing inter-generational communication styles can clash when diverse workers must collaborate on a project. As an Aramco manager, try not to favour one style over another. Instead, work to encourage the generations to connect using both electronic and face-to-face communication. The Younger employees and Traditionalist workers don't like the ambivalence and simply play by the rules. Each generational group carries unique attributes, and Aramco's Human Resources manager needs real solutions and techniques to effectively blend the various workforce groups while maintaining a cohesive work environment. The Traditionalists are defined as highly dedicated, disciplined, moderate, and stable. (Cleveland, J. N. and Shore, 56-58).

The Aged workforce at Aramco has built their success on hard work, discipline and postponement of material rewards. Additionally, they respect hierarchy and consider modern technology as typed memos and flip charts. "Giving back" and contributing to the collective good is an emblem of this generation. At work, Aramco members of this generation are looking for fair play—and when they find it they are loyal to the company and work within the system. For most Traditionalists, their word is their bond and they expect others to behave responsibly and to honour commitments, whether or not they're the bosses.

### **The Aging Workforce is not technologically savvy**

It is a common observation that the Aging workforce is not technologically savvy thereby making it challenging for them to catch up with the utilization of the latest technology in their work. Relying on such a workforce puts the future of the company at great risk as it will continue to use obsolete methods that are very expensive and whose productive output is low.

In case of Aramco, technology has rapidly become a workplace fixture and is increasingly being woven into our lives and lifestyles, providing new options for communication, personal productivity and community interaction, and expanding career and business opportunities. The capabilities of personal training and Internet usage are becoming remarkable tools to help aged employees overcome many of the challenges they face. Implementing accessible technology can amplify and accelerate these opportunities and serve as an equalizer. (Sullivan, 2003, 68-74). The aged workforce in Aramco is dependent on the old technology and skills set. Two primary benefits of an aging workforce are available to younger employees.

There are two superb benefits offered by the Aramco aging workforce: chance and familiarity. Aramco Younger expert by definition lack long-term knowledge, a shortfall of know-how, and burning wish to display their aptitude. The great numbers of an aging workforce proffer the surroundings to power the acceleration of vocation tracks for younger workers. (Sullivan, 2003, 68-74).

Aramco aged workforce opportunity – not to be puzzled with “gift” – have to only add to in coming years. As extremely knowledgeable members of this aging labour force make a decision to head to the golf course or the seashore important positions will be available in companies of all sizes and in for the most part industry. That Aramco younger workforce who are determined can make imposing strides up the business ladder as they seize these coming occasions. (Barth, McNaught, W. , & Rizzi, P. 2003, 34-43).

For the most part Aramco employers will be looking for those fresh workers that take the proposal to speed up their information base, deliver effort past the norm, and show leadership behaviour. Staff members who put themselves apart from the standard worker have to be noticed and remunerated accordingly. But, it is the Aramco employee’s responsibility to stand out from the crowd and to take benefit of the increasing place openings. Available information is the second most important benefit presented to youthful experts. The aging baby boomer labour force has built up a database of knowledge and know-how over the years. As well as chronological knowledge, their knowledge is also completely up to date and, often, state-of-the-art as they carry on to live in important positions in modern business. Whether by corporation rule or mentor (such as a focus of adult workers, or practical efforts of younger employees), this information base can be efficiently transferred from established specialists to the “experts-in-training.” notwithstanding the business, this information and expertise is priceless to the companies who have it and cannot afford to lose it. (Barth, McNaught, W. , & Rizzi, P. 2003, 34-43).

The aging workforce of information workers includes more than 50 % of the total workforce. With fewer younger cohorts entering the workforce and an increasing numbers of retirements being significantly delayed, the proportion of older workers is growing, as is the importance of accessible and assistive technologies. Unless business and industry are proactive, they will miss the opportunity to tap the considerable value of aging workers, resulting in a decline of workplace productivity and a negative impact on the Aramco business and the nation’s overall economic growth. (Barth, McNaught, W. , & Rizzi, P. 2003, 34-43).

In addition to the regulatory requirements relating to older workers and people with disabilities, accessible technology is good business because it serves the interests of all stakeholders, including employees, co-workers, customers, partners and stockholders. Businesses must understand the value of retaining experienced and capable employees, particularly when weighed against the significant costs of employee turnover, which can reach 200 per cent of the

employee's annual salary. Recognizing the value of the aging workforce and the role of accessible technology in retaining older workers will help to alleviate the anticipated workforce shortage. It will slow this exodus from the workforce and the knowledge and talent drain while maximizing older workers' productivity.

### **The lack of organization among the aging staff**

There is a lack of organization among the aging staff and youngsters in Aramco. Despite the level of output being contributed by the Aging Workforce to Aramco's activity and fact that the company may find it difficult to survive without them, 51% and 20% of respondents respectively think they are not sharing their knowledge with the young ones. What makes things most challenging is the fact that 84% of the respondents think they need to learn how to use latest information technology (computers) in their work.

This presents a two-fold challenge to ARAMCO: (O'Connell, A. N. and Rotter, 2009, 85-94)

- The Company is heavily reliant on a workforce that is aging but not transferring knowledge fast enough to the younger generation to enable them be better prepared to replace them when they must have eventually retired; and
- The Aging Workforce is not technologically savvy thereby making it challenging for them to catch up with the utilization of latest technology in their work. Relying on such a workforce puts the future of the company at great risk as it will continue to use obsolete methods that are very expensive plus productive output is low.

In summary, there should be coordination between the young staff and the aged staff in the Aramco. If ARAMCO is to meet the challenges of its aging workforce, it must start putting in place recruitment and retention strategies that meet the needs of the oil industry. While aging workforce is a global phenomenon, not much is being done by most organizations to deal with the problem. Therefore, HR practices in organizations are not focused as much as possible to deal with the challenge. According to the article, "The Aging Workforce: Challenge or Opportunity?" World at Work states, many organizations are beginning to recognize that their long-term business strategies could be compromised by a shortage of available talent if the baby boomers generation do, in fact, retire en masse. Thus far, the reported worker shortages have emerged in fields like nursing, engineering (e.g., in the energy industry) and even long-haul trucking. For just about every industry, however, today's demographic realities raise important issues about what it will take to meet critical business needs for workers, skills and knowledge in the future. What are the options available to Aramco? The following chapter looks at the options and strategies which Aramco could pursue to address the aging workforce factor in it rank. (O'Connell, A. N. and Rotter, 2009, 85-94).

### **Bridging the generation gap**

The Aramco aging workforce does not understand the young workforce thereby creating a generation gap between the two groups. As managers of Aramco workforce, our ultimate goal is to adapt Aramco leadership style to the differences in each generation. Aramco managers can build bridges by recognizing the differences and openly talking about them. Remember, each generation offers benefits to a workplace, which a manager needs to encourage and nurture. By offering mentoring roles for middle-aged and older workers, we give them an incentive to model productivity and also ensure that their knowledge is passed on to the younger workers. (De Long, David, Lost Knowledge, 2004, 35-45).

Age differences can create an insurmountable challenge, at Aramco. If they take a company by surprise, as with most human Resources challenges, communication and preparation are the best weapons to avoid a workforce disaster between these two different age groups. By embracing and encouraging this Aramco workforce diversity, a manager can turn a challenging mix of age and philosophy into an organizational strength and an investment in the future. Each generation, from Young Aramco employees to Gen X to Gen Y, has its own work style and set of behavior at work and misunderstandings commonly occur when these work styles clash. Fostering cross-generational dialogues in any organization can be a challenge. Technology can provide a basis for starting at Aramco; conversations that could help resolve other issues and create a more smoothly-functioning workplace. Reciprocal mentoring programs at Aramco can yield huge benefits for Aramco business, but implementing those programs takes some skill and all participants should undergo some basic training and orientation to ensure that mentoring relationships respect personal and professional boundaries, are structured and productive, and are not intrusive on other important workplace activities. at Aramco mentors and mentees should be carefully matched. When the formal mentorship program is concluded, participants should document their experiences and suggest refinements to the process going forward. (De Long, David, Lost Knowledge, 2004, 35-45).

### **6.3.3. Technology transfer**

Aramco is heavily reliant on a workforce that is aging but not transferring knowledge fast enough to the younger generation to enable them to be better prepared to replace them when they eventually retire. At Aramco, technology has served as an equalizer for people with disabilities, increasing opportunities for employment and independent living while reducing social isolation. Accessible technology provides workers with the ability to personalize their computing environment and adapt it to meet their specific needs, allowing employees of all ages and abilities to realize their full potential. Petroleum refining and well technologies, mining software applications, and other ways of usage of petroleum techniques must be both functionally usable and technically accessible. (De Long, David, Lost Knowledge, 2004, 35-45).

Focusing on accessibility will enhance usability and improve the petroleum procedure for users of all ages. Aramco employers need to implement training programs in accessible technology and establish policies to ensure that accessibility is a criterion in the selection and procurement of information technology. All Aramco employees are valuable and should have access to training, regardless of whether they are full-time or part-time, young or old.

Of course, employers need to take account of the different ways people learn. Initially, some older workers may be less familiar with new technology or software - particularly if they are returning to work after a gap in employment. Also, it may take time for them to adapt to college-based training courses as they may not have undertaken formal study for some time. Older Aramco workers will have advantages over younger workers in some respects. For example they will have more experience and will often be able to apply the theory of the text book more easily to work situations. To plan future training needs consider carrying out a skills audit of all Aramco employees. With at Aramco employees working longer, specialist training in coaching and mentoring could prove invaluable.

Aramco talent management strategies can benefit immensely by understanding factors - beyond financial compensation - that could attract replacement workers, stem turnover, and facilitate knowledge transfer. In comparison to other sectors, manufacturers are less inclined to integrate flexible work arrangements in their organizational designs and are more likely to exclude employees from decision making activities that could influence how jobs are performed. This can place them at a disadvantage in securing the best workers who possess the best skills. (Sullivan, 2003, 68-74)

#### **6.3.4. Health issues in aging workforce**

Without a retiree medical program Aramco could find their aging workforce are staying for a longer period than they normally would—a quandary we call “health care handcuffs.” Paradoxically, this may be a welcome consequence if the company doesn’t want to lose key skills to retirement, even if the choice to remove or not offer retiree medicinal benefits was most probably a cost-based one rather than a tactic for talent retention. All of this proposes that the demographic make-up of the Aramco aged employees will considerably modify over the next few years, quick variances in health care costs. This might stem from the biological dispersion of Aramco aged workforce and retirees covered under a medicinal plan (active employees moving from cold weather climates to warmer geographies when they give up work) or wide-ranging changes in the demographic make-up of those at present covered under the health plans. Variances in health care costs can be directly influenced by geographical and demographical changes. Health care costs in Aramco are increasing—at a quite reliable rate of 7-15% and across the range of companies. As recommended, though, the consequences of Dartmouth’s famous

studies over the years have exposed important variances based on where one lives. In other words, claims are modified based on where a workforce lives.

## **6.4. Recruitment Programs and Reward Strategies**

### **6.4.1. Recruitment and Retention Options Available to Aramco**

Organizations, no matter which industry they find themselves; service or manufacturing, profit or not –for- profits have purpose, goals and objectives for which they are established. Organizations therefore set out with a vision and mission as a guide to where it aims to go. Vision, Mission, Goals and objectives in themselves amount to nothing unless carried out by the right people who are owners, promoters or personnel of the organization. The business of hiring the right people falls in the realm of Human Resource Management. Dessler (2008, pp. 2) states that ‘Human Resource Management is the process of acquiring, training, appraising, and compensating employees, and attending to their labour relations, health and safety and fairness concerns’. This definition cuts across the heart of every organization and reinforces the notion that the success of every organization revolves around its human resources. The extent to which an organization manages this important asset will determine how far it can go in achieving its corporate or business goals.

The options available to Aramco in dealing with the aging workforce factor facing it are: Recruitment of younger graduates and technicians in the areas of geology and petroleum engineering. This area being the upstream end of its business that is most affected by the aging workforce factor means the Company must have an immediate succession plan; Putting in place an apprenticeship program for on the job training where the aging workforce can mentor the younger workforce; Offering of consultancy services to aging workforce after retirement;

- Offering of flexible work hours to the Aging Workforce;
- Recruiting expatriate workers from different regions, particularly Europe and the USA, and
- Offering attractive incentive packages to aging workforce and younger workforce.
- While these are likely options available to ARAMCO, the success of each option depends on several factors. ARAMCO will need to understand the implication of the choice or choices it makes.

### **6.4.2. New Graduates**

Were Aramco to pursue the option of recruiting new graduates from Saudi Universities, it would have to be prepared to face the challenge of less Saudis pursuing the engineering discipline. As was indicated in Chapter three, the educational system of the Middle East is lagging behind those



of other regions. The entire region has no single University that stands out as a technical university that compares to standards with the rest of the developed world.

What this means for Aramco, recruitment of New Graduates in the Middle East is in itself a challenge and therefore the Company will have to rely on expatriates from other parts of the world. Of course this in itself has its own implications as the competition for such skilled workers is becoming fiercer by the day. Other regions and companies are also in need of such expatriates given the aging factor and low graduates in the relevant engineering field the world over. For example, as was discussed in Chapter 3.1, as many as 40% of U.S. petroleum engineers currently employed will retire before 2014 [Alex Preston, head of The Energises, a Houston-based energy recruiting firm]. The average age of a petroleum engineer, who advises on the best way to develop hydrocarbon reservoirs, is 49 years (Cattle Network, February 14, 2006).

#### **6.4.3. Apprenticeship Program**

One of the most tested methods of training and recruitment of new staff is to establish an apprenticeship program or on the job training where new staff can understudy old staff. Aramco could put in place such program where upstream technicians and engineers are required to train younger apprentice.

Advantage of this method, particularly in the Middle East Region with low graduates in Engineering, is it provides hands on practical platform to recruit people interested in making a career in the oil and gas sector though they lack college education.

#### **6.4.4. Recruiting Expert Workers**

The use of expatriate workers in the oil and gas sector is the norm. The success of all companies in the sector particularly in the Middle East is tied to the hiring of Expert workers. However, as was discussed in Chapter 3, these expert workers eventually get old and have to return home to their native country. This therefore presents a challenge to reliance on Expert workers. They may not be used as consultants in the field as they will be thousands of miles away from the host country of the company's operations.

#### **6.4.5. Attractive Incentives**

One of the best means to recruit and retain quality staff is the type of incentive offered. An attractive incentive is likely to be the singular largest pull force to attract staff to the oil and gas industry where other strategies find it difficult.

A principal tool employed by organizations in recruiting and retaining staff is that of the incentive schemes. These schemes take many forms. These plans can be grouped under the following broad headings (Dessler, 2008):

- Individual Employee Incentive and Recognition Programs;

- Incentives for Sale People;
- Team/Group Incentive Plans;
- Organization-wide Incentive Plans, and
- Incentives for Managers and Executives.

### **6.5. Human Resource Tools and Instruments**

In summary, there are so many human resource tools that can be employed to address the aging workforce factor faced by ARAMCO. Some Human Resource tools and instruments include:

- Developing training tools designed to enhance employee capacity;
- Performance management tools and competency framework;
- Developing recruitment and selection methods;
- Leadership and management development programs;
- Developing a salary and compensation policy;

This only affirms the fact that human resource is about getting the right people to perform a specific task in pursuit of an organization's objectives. Dessler (2008, pp. 2) states 'most experts agree that there are five basic functions that all managers perform: planning, organizing, staffing, leading, and controlling'. Human resource then is that fulcrum around which every organization activities revolve. No matter the type of organization, it starts with human resources and reaches its goal through human resource. Even were the business to be closing shop, its last activities must still involve human resource.

In his review of the literature exploring the relationship between age and job performance, Barth, M. C, McNaught, W., & Rizzi, P. 2003 cited studies from both the Arab and the Saudi Arabia which indicated that the relationship between age and job performance is non-existent. This research suggests that the age-job performance relationship appears to be similar across the Arab and the United Arab Emirates. However, a number of authors report that employers in the Arab continue to use age information in their job advertisements and employees report experiencing age discrimination in recruitment because of age limits in job advertisements. The use of age limits in job advertisements in Saudi Arabia is prohibited by legislation protecting older workers' rights. The Arab currently has no formal legislation protecting the rights of older workers. Thus, there are likely to be fewer organizational and governmental policies protecting older workers in the Arab relative to the United Arab Emirates. Barth, M. C, McNaught, W., & Rizzi, P. 2003.

### **6.6. Conclusion**

Further explanations and insights concerning the findings and analyses in the study have been highlighted in this chapter. Some ideas as to what may need to be done are emerging and will be consolidated in the next chapter.

## **7. Chapter Seven: Forward Strategy for ARAMCO**

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### **7.1. Introduction**

Chapter six discussed the possible lines of thought available to Aramco in addressing its aging workforce problem. Which option(s) should be adopted as the forward strategy for Aramco is discussed in this Chapter. Lynch (2009, p. 218) states that 'strategic purpose is delivered by identifying and delivering the mission and objectives of the organization'. For Lynch, the attainment of these two objectives requires the consideration of why the organization exists, who it is meant to serve and how its value added should be generated and distributed amongst its stakeholders. Lynch terms that as the 'broader purpose at a more fundamental level of the organization'. Lynch affirms this when he said "the broader purpose of the organization and its vision of the future will set the focus and stretch the organization as it develops the more specific subjects of mission and objectives". To this end, the vision and mandate of Aramco should drive the chosen strategy of the company.

### **7.2. Vision and Mission of ARAMCO**

Aramco has as its vision of being a global oil and gas company with substantial stakes in the upstream and downstream sector of the industry. Its mission is to ensure the availability of petroleum products to Saudis and the global consuming public as and when needed at affordable prices through cost efficient method of production. Achieving this purpose and mission requires the recruitment and retention of the right workforce capable of actualizing the set goals and objectives. The recognition of the fact that an aging workforce is a threat to the realization of the vision and mission would enable the company to reach its goals. This requires the employment of the right strategy or strategies.

### **7.3. Aramco External and Internal Environments – SWOT Analysis**

One of the constant realities of human existence is the recognition of the fact that people grow old each and every passing day of their life. It is in recognition of this reality of aging that people, as well as organizations prepare themselves for the time when they will no longer be in the position to work or when an employee retires. While there are many factors that could lead to retirement, for example illness and accidents, the principal factor however is aging or old age. Human resource professionals have identified aging work as the number one demographic trend impacting employers (Dessler 2008, p. 531). Two implications for employers as identified by Dessler are:

<b>Strength</b> <ul style="list-style-type: none"> <li>• Large oil reserves</li> <li>• Large financial assets</li> <li>• 100% Government owned and backed</li> <li>• Large International Network</li> <li>• Large National Distribution Network</li> </ul>	<b>Weakness</b> <ul style="list-style-type: none"> <li>• Over reliance on foreign nationals engineers upstream</li> <li>• 24% Aging workforce</li> <li>• Less Petroleum Engineer graduates from Saudi Universities;</li> <li>• 100% national government ownership</li> <li>• Relatively small downstream capacity</li> </ul>
<b>Opportunity</b> <ul style="list-style-type: none"> <li>• Increase in oil prices</li> <li>• Increase in enrolments of students in petroleum engineering globally;</li> <li>• New efficient exploration technology</li> <li>• Attractive industry</li> <li>• Strong oil demand growth in Asia</li> </ul>	<b>Threat</b> <ul style="list-style-type: none"> <li>• New technologies in exploration (extensive knowledge transfer)</li> <li>• Global shortage of Engineers and Geologist in the oil/gas industry</li> <li>• Terrorism attacks on pipes lines</li> <li>• Population explosion in Saudi Arabia thereby increasing demands of energy</li> </ul>

**Figure 7:1 SWOT Analysis of Aramco**

Strategic thinkers like Prahalad and Hamel [cited in Grant, 2005] argue that it is not necessarily the size of a firm's resources base that is the primary determinant of capability, but the firm's ability to leverage its resources (p.164). Although Aramco is endowed with huge oil reserves, these may not necessarily be useful until they are seen to be a source of competitive advantage for the company and begin to be used towards that goal in order to overcome the weaknesses and threats. That the company has huge resources and yet there are few human resources to deliver competitiveness should challenge the company to strategically place training and recruitment as possible priorities and then focus on transfer of skills to the younger workers. The role of the government also becomes crucial here in ensuring that relevant education is made available for the economy and this seems possible since the company has good relations with the government. In all these activities, it seems feasible to U-turn Aramco's weaknesses and threats in the long run.

#### **7.4. What should Aramco do???**

##### **Research question 6**

##### **What are the possible strategic directions that could help mitigate the challenge of the aging workforce in Saudi Aramco?**

This question focuses on ways to benefit from the aging workforce in Saudi Aramco. Aramco and indeed all organisations cannot succeed without older workers. The study has shown that this workforce is important because:

1. They have a wealth of good experience that could serve as a continuous source for training the young workforce.
2. They can draw up new plans to increase production.
3. They can evaluate the company position and monitor goals achievement.

From the study an average of 75% and above of the respondents strongly agree or agreed that there are numerous new strategic options available to Aramco. These range from recruiting the best staff via the internet; awarding of attractive compensation packages to the human resources as a means of retaining them; utilization of advance information technology to communicate within the organization; making job descriptions and functions simple; and running a good apprentice program for new graduates.

In order to find answers to this important question of this study, it was necessary to find some criteria of developing options for Aramco by taking a long-term view of management. Career planning at Aramco can help management to think about an employee's whole working life from recruitment right through to retirement. But it is not always easy. Older Aramco workers can present management with specific problems. For example, how do people make the most of their expertise without blocking potential career progression for junior colleagues? One of the answers is to be more creative about how management sees career progression. Promotion will always be important but 'getting on' is not just about moving up. Aramco employers may find it worthwhile thinking about other options for older workers, such as: (O'Connell, A. N. and Rotter, 2009, 85-94).

- a more open job description, with a wider variety of tasks
- lateral moves to other jobs, giving more responsibility on special projects
- A mentoring role to help develop and coach junior colleagues.
- Older Aramco workers often respond positively to greater choice and flexibility at work. Employers need to be flexible, too, about how they hold on to the valuable skills and knowledge of experienced staff.

Aramco strategies for achieving targets should be written with career paths in mind. Developing the skills and experience of older Aramco workers may offer employers the chance to set new and challenging goals for individuals and the organisation as a whole. Aramco Career plans should be a positive reflection of what older workers can achieve rather than an acceptance of negative stereotypes. However, it is also up to employees to identify their own strengths and to discuss career ideas with their managers.

Youngsters must be appreciated within the Aramco. With 24% of the 54,000 workforce of Aramco above 50 years old and an industry with fast changing technology but a low intake of engineering graduates from Saudi Universities, the urgency with which Aramco must address its aging workforce challenges are more compelling. Critically though, it is established that these aging workforce contribute significantly to productivity and profitability. Yet, their relationship to the younger workforce in terms of communication is low. The young workforce hold the view that aging workforce are out of touch with modern developments while the Aging workforce thinks the younger once lack the discipline required to build a career in the oil industry. About

71% (i.e. 48% strongly agreeing plus 23% agreeing) thinks the aging workforce does not understand the young workforce thereby creating a generation gap between the two groups. This generation gap has presented human resource challenges in terms of knowledge transfer and retention of critical skills vital to the survival of Aramco. (O'Connell, A. N. and Rotter, 2009, 85-94).

For example, if 75% of respondents believe the aging workforce is more skilled at using the equipment when compared to young workforce but there is a gap in communication between the two groups, then the smooth transfer of knowledge from the old to the young becomes a challenge. In similar vein, if Aramco is 90% or more reliant on expatriate workers who are also aging and likely to return to their native countries, yet there is a low intake of graduates in Geological and Petroleum Engineering of Saudi or Arab Nationality, then the human resource issues become more acute by the day. (O'Connell, A. N. and Rotter, 2009, 85-94)

However, with 83% of the respondents agreeing that having an aging workforce in a company's rank is a great asset and provides the reservoir backup for highly needed technical resource, then one could surmise that Aramco has room to remedy the situation. The challenges are surmountable. What is basically needed is identification of the various strategic options and choosing of the options that best contributes to the Company's growth and profit objectives. That is more so when 77% of the respondents think the aging workforce provides the best mode of training for the younger workforce. Thus it would not be a surprise for 83% of the respondents to think the years of experience of the aging workforce gives them the ability and capability to evaluate work situations effectively.

The view of the respondents on the success of companies being tied to the retention of the aging workforce is split 35% strongly agreeing and 37% strongly disagreeing. This view is supported to the extent that 87% of respondents strongly agree with the fact that the Aging Workforce plays a critical role in policy formulation to ensure an organized work environment. It is therefore not unconnected to the commitment level of the Aging Workforce. 52% of the respondents strongly agree that Aging Workforce is more committed than the young workforce. Similarly, 39% agree with this assertion. The level of contribution by the Aging Workforce to the output level cannot be separated from their ability to develop and utilize long term strategic plans. This view is supported by 53% and 38% of the respondents strongly agreeing and agreeing respectively that the Aging Workforce utilizes strategic plans in its productive work. This further confirms the fact that the wealth of experience possessed by the aging workforce has been developed over a long period of time thereby enabling them to carefully plan their activities.

## **7.5. Backdrop to the Strategy Consideration**

In evaluation and selection of the strategy to adopt, a firm will need to look at the internal and external environment of the firm compared to its capabilities and core competences. Aramco SWOT reveals a lot about its operating environment and therefore provides a basis upon which the chosen strategy can be based. This is in line with the classical strategic management view as Lynch (p.371) describes it. The “rational and fact-based analysis of the options in order to deliver the strategy that is most likely to be successful” (ibid. p.374) is adopted where logic and evidence were taken as supreme in considering the available options. The process involves six criteria identified as follows:

**1) Criteria 1: consistency**, especially with the mission and objectives

Here the purpose and objectives of ARAMCO to become a global player in the upstream and downstream sector of the oil and gas industry is considered. Any option that restricts Aramco’s ability to reach this objective would record low score on this category (i.e. consistency).

**2) Criteria 2: suitability**

The suitability criterion assessed how well the options matched the environment and resources of Aramco. The environment in which Aramco is operating is facing a shortage of skilled geologists and petroleum engineers, particularly in the Middle East; it is highly reliant on expert workers and evolving new technologies that are more efficient than the existing extraction technology. Aramco has the financial resources needed to attract the right workers to replace its aging workforce or tackle its aging workforce problem. These are the things considered under this criterion.

**3) Criteria3: validity**

Here, several assumptions were made such as the expected rise in both local and international demand for the petroleum engineers in the oil and gas industry, particularly in parts of the world other than the Middle East. This criterion was used to test that all the options were reasonable and well grounded.

**4) Criteria 4: feasibility of options**

To what extent could the proposed strategies be carried out was the consideration under this criterion. A sub list of criteria was adopted to examine further the culture, skills and resources of the organization in order to identify the constraints.

**5) Criteria 5: business risk**

For a strategic option to score highly, it is necessary that it does not expose the organization to unnecessary levels of risk or danger. This, however, did not mean that the selected option will have no risks as risk is endemic to most business transactions.

## 6) Criteria 6: attractiveness to Saudi Aramco

Here was considered how the option will be attractive to employees, shareholders and management. Shareholders will need a return on their investment while the already highly motivated workforce should remain so.

**Table 7:1 Strategic Options Evaluation Criteria**

#	Option	Consistency	Suitability	Validity	Feasibility	Business risk	Attractive-ness	Total Score
1	Proactive Recruitment of New Graduates	5	5	5	5	2	5	27
2	Enhanced Apprenticeship and mentoring Program	5	5	5	5	1	5	26
3	Offering Aging Workforce Consultancy Service	5	3	5	5	2	3	23
4	Flexible Work Hours to Aging Workforce	5	4	4	4	4	2	23
5	Recruitment of EXPAT Workers	5	5	5	5	2	5	27
6	Paying Attractive Incentives	5	5	5	5	2	4	26
<b>Key</b>	1	2	3	4	5			
	Very low	Low	Average	Good/ Median	Best/ High			

It is observable from Table 7.1 above that the most attractive options in the way forward for Aramco as it ponders its aging workforce problem is a combination of all the options. The Proactive Recruitment of New Graduates and expatriate workers are found to be the most effective on the counts of consistency, validity, suitability, feasibility, attractiveness and less risky. Apprenticeship and mentoring however, is the least risky and together with the payment of attractive incentives are the next most effective options. The offering of consultancy service and flexible work hours are tied on total points of the table at 23 each. They are on the lower rank in terms of pecking order on which options to adopt. The challenge in all this remains that older workers will still continue to be old and so Aramco will need to look to the replacement of these workers and find ways of having transferable skills onto the new younger workers smoothly and amiably.

## 7.6. Reciprocal mentoring elegantly will solve several workplace issues at Aramco

### Mentoring at Aramco



Mentoring will be very beneficial for new hires at Aramco. If Aramco has made the investment to hire and train a new employee, you want to make sure that person starts making an impact right away and remains around long enough to keep adding value in the future. Assigning a mentor is a good way to supplement existing training and orientation programs and giving the young employee an advocate and resource they can turn to within the business. (Barth, McNaught, W., & Rizzi, P. 2003, 34-43).

Reciprocal mentoring allows workers of all ages to feel valued. Young people coming into Aramco business want to show what they can do. By sharing their knowledge to help colleagues with less experience with technology, they can contribute something of value right away and be recognized for it. Older Aramco workers want to demonstrate that they still have something to contribute. By participating in reciprocal mentoring, they not only pass along their knowledge and wisdom, but also keep their technical skills sharp and current. It supplements and reinforces existing training programs. Online and classroom training programs can be great at Aramco, but nothing beats the experience of one-on-one learning. In the mentoring environment, each employee can ask questions and learn at their own pace, in a relationship where they feel comfortable.

It lowers adoption risk of new technologies, particularly those that might disrupt or discomfort experienced workers. Studies show that most social and collaborative deployments fail due to low user adoption rates. With better uptake across the organization, businesses can increase the value of their IT investments and realize return on investment more quickly. (O'Connell, A. N. and Rotter, 2009, 85-94).

## **7.7. Conclusion**

This chapter has ended by showing that there are possible gateways for Aramco in tackling the aging workforce challenge. These possibilities have been generated from the company's strengths and opportunities in order to minimise on its weaknesses and threats. Among the proposed options are the proactive recruitment programme accompanied by enhanced training and mentoring. Such a strategy is plausible in that skills from older workers would be transferred to the younger newly employed workers at an affordable cost. This is important in that it is not technology or machines that will render Aramco sustainably competitive but the skills and experiences of its workforce which may be difficult to imitate from other global players in the game.

## **8. Chapter Eight: Conclusion, recommendations and Implementation of the Proposed Strategy**

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### **8.1. Introduction**

This chapter finally sets out what has been achieved in this study in simple and clear terms in line with the originally set out objectives in chapter two. The chapter is a self-assessment mechanism for the researcher to see whether the study has achieved anything. The study was about exploring the extent of the aging workforce challenge in Saudi Aramco Company and suggesting possible sustainable strategic directions to mitigate the impact of this challenge. The chapter begins by concluding the findings and analyses of this study and then highlights the recommended strategic options. It ends with brief notes on implementing the chosen strategic options in order to overcome the challenges that the company is currently facing.

### **8.2. Study conclusions**

In this study it has been found out that there is a global challenge of finding talent for the oil and gas industry particularly for the developed world. The challenge has also been observed in Aramco considering the company's dependence on expatriate workforce and its high levels of older employees. The study has achieved its objectives as it has answered the questions that were set to be answered:

#### **Research question 1**

To what extent is the aging workforce challenge affecting the global gas and oil industry?

The study found out that there will be a critical shortage of labour towards the year 2030. This shortage seems to be more pronounced in certain skill areas and industries. The oil and gas industry is no exception. It was found that many companies are becoming aware of this challenge and that it will be escalated in the near future and some are beginning to put some measures in place. The challenge was found to be serious and one that needs no cosmetic measures to attend to it.

#### **Research question 2**

To what extent is the aging workforce challenge significant at Saudi Aramco?

Comparable to the global challenge of the aging workforce, the study has shown that Saudi Aramco may not be an exception. The company's workforce has nearly a quarter of them aged 50 and above and the company also has to depend on expatriate engineers as the local talent is not just there. Some training programs have been initiated at the company with emphasis on the

apprenticeship programmes and advanced degrees. These may not yield quick advantages now considering their scale but they are a step in the right direction.

### **Research question 3**

What are the implications of the aging workforce challenge for Saudi Aramco?

The implications of the aging workforce challenge are numerous. Older workers were found to be perceived as very essential to the company's competitiveness in the global economy for being more organised, orderly and able to provide managerial skills that were commonly available with the younger employees. The study also showed that the older employees were indispensable to the productiveness of the company.

### **Research question 4**

How does the Saudi Arabia national environment contribute to the aging workforce challenge at Saudi Aramco?

Among the many contributory factors to the aging workforce challenge, the analysis of the national environment in Saudi Arabia revealed that the education system in the country was one probable of them. The Saudi education system has not focused on technology and engineering studies despite the huge attractiveness that these studies have for the oil and gas industry in the oil rich Kingdom. The study also made some references to the health and national economic statuses and how important they could be in this challenge.

### **Research question 5**

How could the human resource management strategy / policy at Aramco contributing to the aging workforce challenge at Saudi Aramco?

From the study of motivation factors outlined in chapter three, it may be suggested that the HR policies at Aramco would contribute to the aging challenge if there are no efforts put in place to have the younger and older employees to come together and transfer skills from one to the other and have them motivated. The recruitment program could also be directed at the younger employees although the challenge is that they do not just exist.

### **Research question 6**

What are the possible strategic directions that could help mitigate the challenge of the aging workforce in Saudi Aramco?

The proposed forward strategy for Aramco is that which combines the active recruitment of new graduates with that of expatriate workers coupled with establishing apprentice and mentoring service, allowing aging workers to retire but yet serve as consultants including offering very attractive incentives and flexible work hours for the aging workers. This means a mix of defensive, reactive, adjust and offensive strategies. The training and development of skilled and

trained manpower in geology and petroleum engineering is the least contentious and the most likely to be supported both within and without the Aramco including stakeholders' support. It would be in line with Middle Eastern Governments' Educational Policy towards the sciences as was discussed in Chapter three. One can only conclude with the view of Tower Perin as contained in the Article, *The Aging Workforce: Challenge or Opportunity?* that, the key to turning today's demographic challenge into a business opportunity lies in a two-pronged strategy: careful workplace planning and developing targeted talent and reward strategies that align with key business goals while effectively managing labour costs and risks. World over talent is scares but organisations may take time to develop it in the workforce that is within their charge.

### **8.3. Recommendations**

At Aramco, a proper reward policies and programs should be in place, it is a high-quality practice to decide and communicate a procedure to ensure that they remain pertinent to the altering business environment and that any transformation can be made without going back to the drawing board. The major issue to be decided here is to recognize levels of authority in Aramco. An easy method to facilitate this procedure is to think of a typical international business, with local, regional and international--or corporate--HR teams. Every policy and program can be considered to describe who has most important authority over which strategies and who needs to be consulted or informed. Aramco could embark on teams as a way of minimising the individual deficiencies of workers.

### **8.4. Strategy Implementation**

The implementation of the proposed strategies by Aramco will not be a one off activity. Borrowing Lynch's words, it would be 'incremental changes in a strategic direction'. This should be the logical course considering stakeholders affected would hold reservations about or even objections to – the proposed strategic change. Lynch therefore advised to implement, probably through a pilot project, use learning based approaches, circulate the results of the initiatives so others can analyze the consequences and so that adjustments can be made (Lynch 2009).

Basically then, the type of organization that is required to implement this proposed strategy is one in which specific and testable plans can be developed in a number of specific areas according to Lynch including:

- *Explanation and understanding of the value added.* That means first educating the Aramco workforce and the general public on the value of geology and petroleum engineering education for the Saudi Arabia. The Saudi public should be able to visualize the tangible benefits economically and socially if the engineering capacity of the country is trained and developed. Invariably, this means that those implementing the strategy

must clearly understand this added value, its purpose and the strategies by which it would be achieved. Hence, agreement by those involved may also be necessary in order to overcome objections to the proposed strategy.

- *Fixing difficulties.* The organization must build monitoring mechanisms and milestones into the proposed strategy process. This is necessary because in most implementation procedures, problems arise. It is therefore important that such difficulties are recognized as they develop. The Aramco strategic plan for the development of the human capital should have measurable milestones that are evaluated and monitored periodically.
- *Summative evaluations.* The company must be able to find out if the purpose of the strategy has been achieved. Thus, a monitoring mechanism looking at the outputs (i.e. the actions produced by the strategy and outcomes (i.e. the larger ramifications of such changes, especially the symbolic changes that occur) must be built into the implementation process.

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## **9. Chapter Nine: Reflection**

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### **9.1. Introduction**

This reflection looks at the entire research process starting from the proposal writing to the writing and compilation of the final report.

### **9.2. Literature review**

The amount of literature available on aging workforce was overwhelming let alone the thoughts of which ones to use in this study. In almost all the literature that was accessed, general observations were towards making the older workers continue working as may be seen from the adjustments in retirement age for countries like Germany and France. In this study however, I have endeavoured to slightly step out of this thought and consider migrating by accepting this challenge. I greatly benefitted from the literature that I accessed on this subject and until then I did not realise how serious the problem of aging workforce was particularly in certain economies, industries and organisations. It is not arguable that there is still far too much literature out there about the subject but I am content with what I could manage to read so far and really made good use of. It was not an easy task to select literature but as indicated in my literature review motivation, I focused on literature that had to do with global aging challenges and that touched on human resource policies as shown in my conceptual framework.

To a large extent, dependence on literature in this study was quite high. In concepts like global challenges of the aging workforce and role of government, literature became paramount as it was the best source available. In the analysis of the findings, literature was still relevant as well and without it this study would not have reached anywhere near completion. Admittedly, not all the literature reviewed in this study was useful in the analysis and development of strategy for Aramco.

### **9.3. Methodology**

The approach adopted in this research was the deductive method. That meant starting from a generalization on the topic by way of hypothesis and testing the hypothesis through the identification of a respondent sample (Saunders et al, 2009). Reflecting on this approach compared to the inductive, I realized that it provided the opportunity to work in a controlled environment and gathered information from primary data sources. However, the fact that I was limited to a given sample size to test my hypothesis suggest some level of subjectivity. While I thought this approach was generally accepted and is scientific in its investigation, it does not mean that the sample choosing is truly representative of the population. Probably the inductive

approach which allows of contextualisation of the problem, particularly since I was dealing with a particular company would have been more appropriate. In the future therefore, I may opt to combine both methods as a way of getting the best out of the approaches and dealing with limitations on both sides.

#### **9.4. Content**

As a researcher, it was exciting to note that there was a lot of information about the subject of the aging workforce. It was also an exciting experience to be able to select what data to use and what to leave out in the process. As a general overview, I am generally satisfied with the amount of content discovered in the study. However, a lot more of the content would have been much more useful if there was enough time to decipher it.

#### **9.5. Process**

The process of the thesis writing was very challenging. It started from conceptualization of the right topic. What do I write on and how well does it fit with the modules learnt over the period in the MBA program? However, with the assistance of my Supervisor, I was able to develop a topic and a proposal that laid the basis of the entire process.

The whole process of developing the proposal, definition of the problem and the conceptual framework proceeding to the in-depth literature review as a means of knowing what has been written on the topic to be able to see gaps that needed filling was not a smooth sail. My undergraduate degree programme did not have such a rigorous task as this programme.

Thesis writing as I found out was the most difficult part of the MBA programme. I found myself alone as all my friends were also busy writing and could respond to my call for help easily. Further, I learnt that the postponements I was making although genuine somehow worked against me. Delayed submission of the project was a disadvantage in a way. Finally, having written some work and you are told it was not good enough was a further source of anxiety for me. How do I get out of this looming failure was my constant thought. I resolved to work harder in order not to waste my last chance. This was a stressful experience and my family can testify how serious this has been.

#### **9.6. Conclusion**

Ageing is going to turn into a major demographic event in the near future, which will, therefore, not only transform the community refuge systems, but also badly shake the foundation of society. In a kingdom like Saudi Arabia, where every sixth person will be 64 years and older by 2029 (Statistics Saudi Arabia 2004: web document), the message that, 'older citizens are a load or

threat to the society', can no longer be ignored. Hence, elderly-friendly changes in a variety of spheres of communal life are essential. If the society fails to implement these changes, senior people might 'enforce' the alternates themselves, simply due to the fact of their number and their control: they have enough time and also the money as they are more prepared and better knowledgeable than preceding retiree age group, they have electoral authority (if they carry on as a group) and they have enough 'inside' information in relation to the political and neighbourhood systems (as they themselves have build these systems) to turn the present society and its principles upside down.

In order to cope with the implications of inhabitants' ageing, to stay away from any 'clash of generations' and to reinforce the welfare society it is necessary, among others, to conquer the existing mismatch between the demand and supply of labour. For this reason, speculation in human capital and the creation of jobs for less skilful workforce needs to be promoted. The measures will assist in overcoming possible labour scarcity as human resources are employed more skilfully and at a higher service rates. When considering the latter fact, a decrease in the value added excise on labour intensive services is worth a consideration. This measure could lead to additional services for elder individuals at a reasonable cost (shopping support, home assist, renewal of apartments, etc.) and a decrease in unemployment and illegal activities at the same time. In some cases the tax deductibility of domestic associated services is an excellent quality oriented approach which shows additional potential. In addition, policies have to be pursued which encourage attitude transformation towards elder folks and popularize active ageing (life-long-learning, networking and performance of pensioner relations, potentials for voluntary work on base of retirees, etc.). Similarly regional disparities associated with inhabitants ageing and the progress of the 'silver economy' requires being effectively addressed. In addition it is valuable to think again the superiority standard (persons being no older or the longer they are with one company) as it may produce obstruction in the employing or sustained jobs of adult workers. If these points are sufficiently addressed on the political and communal level, the chances of resolving the issues in inhabitants ageing can be addressed to their fullest degree.

Over the previous 25 years, recruitment, education and progress have undergone a major revolution in the developing industry, economic and community climate. At the same time as we strived to keep a long-standing focus and visible targets for our Human Resources policy, the alteration to our approach was necessitated by the varying business environment, demographics and traits of the new generation of human resources. For instance, in the past, the focal point of attraction and retention was largely the generous pay and other tangible settlement. These days, human resources do demand competitive pay, but it is not the only issue for accepting the offer of employment. Additionally, they expect the corporation to offer challenging work assignments, knowledge and progress opportunities, obviously mapped-out career progression, and a part in the decision-making procedures. We are also careful in our staffing practices nowadays, and



communicate rigorous evaluation techniques to evaluate the value and skills of candidates and the long term return on our enormous asset in human resources.

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## Appendix A: Questionnaire of Aging Workforce

Dear, Mr. /Miss

The researcher is conducting a study titled *the aging workforce at Saudi Armco* and that's for completing the requirements of the Master degree in Business Administration from the Hanze University, Groningen. So please spare some few minutes to provide responses to these very important questions by writing your responses in the spaces provided or by ticking ☒ where applicable.

Thanks for your help.

The main aim of this questionnaire is to identify the impact of the aging workforce at Saudi Armco, so the validity of the study findings depends on the degree to which your answers are accurate.

The researcher

### General Information:

**Career: Administrator employee**

Scientific Qualification: BA MA PhD

☐
☐
☐

Experience: one to five years six to ten years

☐
☐
☐

Eleven to fifteen years More than fifteen years

☐

	Sound	Strongly agree	Agree	Neutral	disagree	Strongly disagree
1	The aging workforce contributes in fostering productivity.					
2	The aging workforce has experience enough to face problems and risks					
3	The aging workforce has a high level of capability of productivity.					
4	The aging workforce is of high-qualified productivity					
5	The aging workforce is a though capital of the company.					
6	The aging workforce is distinctive for being able to use the different types of equipment.					
7	The aging workforce is distinctive for being able to be organized					
8	Most great companies have an aging workforce.					
9	The aging workforce is distinctive for being able to evaluate.					
10	The aging workforce is distinctive for being able to guide and instruct.					
11	The aging workforce can deal with the young workforce.					

12	The aging workforce can understand the young workforce.					
13	The aging workforce contributes to gain high profits for the company.					
14	The aging workforce is distinctive for being able to deal with different kinds of mediators.					
15	The aging workforce stands opposite to the capabilities of the young workforce in Saudi ARAMCO .					
16	To have an aging workforce to Saudi ARAMCO is an intellectual resource					
17	The aging workforce supports the young one through its extended experience and knowledge.					
18	The aging workforce is to utilize information technology in order to enhance productivity.					
19	The aging workforce contributes to transfer its experience to the new stuff.					
20	The aging workforce seeks to realize the administrative justice					
21	The aging workforce contributes to utilize its knowledge to raise the profits of the company.					
22	The aging workforce uses strategic plans to foster the company productivity.					
23	The aging workforce believes how important the young workforce in Saudi ARAMCO is.					
24	The aging workforce is adhered to raise the level of job commitment in Saudi ARAMCO					
25	The aging workforce realizes the significance of time to Saudi ARAMCO .					
26	The aging workforce contributes in drawing policies organizing workers performances in Saudi ARAMCO .					
27	Population increase is a significant problem to Saudi ARAMCO .					
28	The lack of qualified workforce.					
29	The lack of well-trained workforce.					
30	The lack of experience of planning strategies among the young workforce.					
31	The lack of organization among the young stuff.					
32	The raise of the efficiency of local and coming workforce in the Kingdom.					
33	Leakage of capitals abroad through transferring.					
34	The steady increase in the international demand on Hydrocarbon is an additional stress over the company research center to produce new technologies.					

35	The increasing demand on a long-term power that requires long-term solutions, however this increase is a notable challenge for all oil producing oil throughout the world.					
<b>Fourth domain: suggested strategies to benefit from the aging workforce in Saudi ARAMCO</b>						
36	The provision of attracting environment for a workforce.					
37	Benefiting from investment possibilities of the Kingdom.					
38	Conducting training courses bring the aging and young workforce together.					
39	Providing labor market newcomers with good jobs.					
40	Appending the young workforce to training courses in different companies.					
41	Putting obvious mechanisms to determine the required objectives and results.					
42	Supervising the fulfillment of objectives and amending and develop them in the light of external and internal changes.					
43	Putting a flexible mechanism to prepare and activate a set of policies to guide the course of work within Saudi ARAMCO					
44	Providing rules for decision making to ensure a state of corporation and coordination between decision makers in all sections of the company.					
45	Drawing an organizational structure distinctive for being simple, active and in line with the common state of the organization.					
46	Clarifying main duties to the employees in Saudi ARAMCO .					
47	Drawing organizational relationships in the light of the flow and overlaps of the relationships in Saudi ARAMCO.					
48	Selecting systems to invest and develop human resources capabilities.					
49	Supervising the functional relationships fitting the quality and intellectual level of a human resource.					
50	Providing information systems and communication channels that realize communication among the organization parts internally and abroad externally.					
51	Measuring and evaluating the performance of human resources.					
52	Rewarding and Compensating the human resources.					
53	Saudi ARAMCO has to meet the lack of qualified human resources by bringing the best stuff via Internet.					

What is the benefit of maintaining the aging workforce in Saudi ARAMCO?

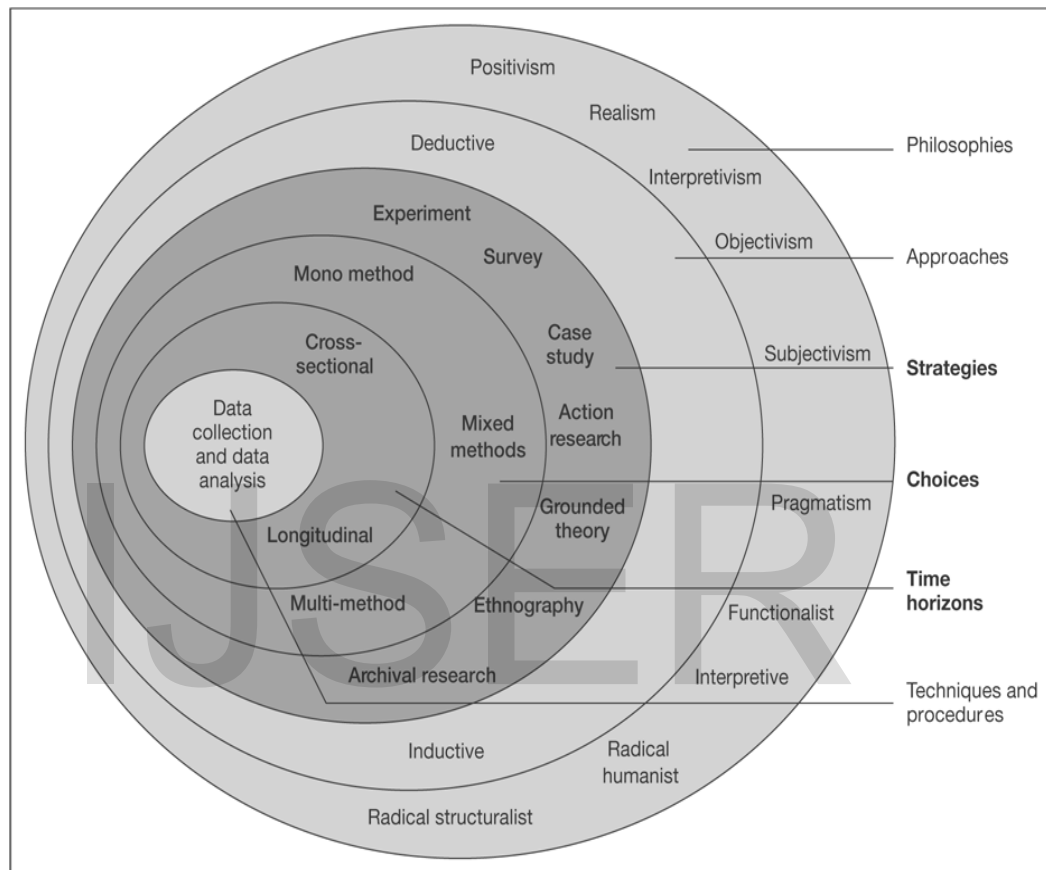
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## Appendix B



**Figure 0:1 Research 'Onions'** (Source: Mark Saunders, Philip Lewis and Adrian Thornhill 2009)