

## **The impact of fleet management optimization in the oil sector of oman.**

**[1] Sultan Al Kaabi, [2] Melisa Zibusiso Lydia Ncube, [3] Aliya Almamari**

[1] Operation Superintendent, Khazzan Logistics Management Service,[2] Lecturer,  
Department of Management Studies, Middle East College, [3] Lecturer, Shinas Vocational  
College

[1] kaabisultan@hotmail.com,[2] melisa@mec.edu.om, [3]  
Aliya\_almamari@shinasvc.edu.om

**Abstract**—This paper sought to show the fleet management optimization in the sultanate of Oman and especially oil sector which is mainly operate in the interior area in Oman. The study was guided by objectives that include to optimize the fleet management to enhance the availability of vehicles in the operations area and the actual need of them. The focus of the study to optimize the usage of the vehicles and to make sure the companies support the sustainability and utilised the available vehicles in proper way. All that support the logistics and materials management as well in the long-term operations. It is not just cost cutting it is the focus in the sustainability in the long run, less vehicles less fuel which will lead less pollution.

**Index Terms**— Fleet Management, operations, Sustainability, logistics and materials managements.

### **I. INTRODUCTION**

Fleet optimizations are the focus on new techniques that many organizations work on to monitor and utilize the available fleet in a perfect way. We specify oil companies in the interior area in the Sultanate of Oman as they have specific requirements for the vehicles that can be used in these sites. The vehicles in these sites required more safety standards than other working places. They deal with oil and gas and any mistakes will cause a disaster. This study will focus on improvement and benefit from all vehicles available at the site. We will explain some of the monitoring systems used in such vehicles such as the In-Vehicle Monitoring System (IVMS), fleet management, and the operation of all these systems.

### **II. LITERATURE REVIEW**

#### **FLEET MANAGEMENT UNITS**

It is the function of monitoring, controlling, manage and coordinating transportation activities (Bruce,2014). Effective fleet management to optimize the available resource in an effective way will lead to minimizing the total operation cost and will save more in materials which this

vehicle consumes from time to time and reduce pollutions (Gregory, 2014). In such a business, vehicles are available to everyone, and the plan from fleet management to make the vehicle available for everyone whenever it is really required. For sure such implementation will require policy and role so everyone must obey it with the time.

### **IN VEHICLE MONITORING SYSTEM (IVMS)**

To monitor your vehicle which is considered an expensive asset you need to implement such a system, this system allows you to track them and get all data and details which will lead to utilizing them in the right way (Alshamsi, 2016). Such system allows you to know the location of your vehicle as it is supported by Global Positioning System (GPS) which can indicate location, obey the road role such as seat built and speed, details of consumption millage, and support for the driver in case of an emergency (Alzahri, 2016). Such a system will let to control wider team and a bigger fleet of vehicles (Chen, 2010). All oil and gas companies in the Sultanate of Oman implement such a system so they can monitor the people and assets in an easy way and provide good service either for customers or stakeholders.

### **NEED OF FLEET MANAGEMENT**

There are many reasons that support the researcher to tend to this study, I will try to list them down in a proper way. Visibility of current needs cannot be there if no proper system is in place (Brooks, 2011). Each employee in the oil field will prefer to have his own vehicle even if the real need is limited. Implementing fleet management will not be challenging for all staff and management but in long run, it will benefit the organization and it will save a lot of money and will utilize vehicles (Gregory, 2014). For sure accurate fleet monitoring will be easier than tracking individuals as the hub place will check all the maintenance required or service needed for the fleet.

### **LOGISTICS MANAGEMENT**

To achieve customer satisfaction, you need to monitor information flow (Voortman, 2004). An efficient flow of information will support accurate logistics management to manage the exact requirements (Skapinyecz, 2018). Once you have a wide fleet to manage you will require a lot of materials to make sure smooth operation on the ground is going on and that will require a good system to manage the logistics of that fleet (Bahija, 2016). The performance of the logistic materials reflects the performance of the fleet (Alavian et al., 2020).

### **THE IMPACT OF FLEET MANAGEMENT ON SUSTAINABILITY**

Companies that are started to care about sustainability by practicing sustainable solutions to gain client's satisfaction in the supply chain and improving their own performance (Rao, 2005), (Markley and Davis, 2007). Collaboration is needed from all parts of the industry to protect and to save the environment (Ates et al., 2012); (Wilhelm et al., 2016). Companies now are using buses which take 11 employees from one location to another rather than a car for each employee will be a good procedure to protect the environment from Carbon Dioxide emissions. And this number of passengers is during the current circumstances of Coivd-19 in the normal

days it will take more than 25 staff each time.

### **THE IMPACT ON OPERATIONS**

Managers who are managing the fleet are dealing with a lot of risks that they must manage. They focused on the type of vehicle, needed maintenance equipment, and employee experience while using the vehicle. fleet management required understanding the risks associated with vehicles, driving difficulties, how to report the incidents which may happen, and ways on how to solve them. There are many sources and tools that support firms to formulate their own fleet policies and practices to manage their fleet effectively (Bendickson, 2021). Considering smoothly operation needs to focus on all factors such as quality of work, availability of vehicles all the time, response time, and schedule maintenance (Chang,2008). For sure the operation will have an impact in case of any fault or lack of response from the fleet (Deok, 2009). To manage operations, you need to manage the information and data for smooth operations (Hyo, 2017).

### **III. DISCUSSION OF FINDINGS AND CONCLUSIONS**

The main reason for this study was to find solutions that require the implementation of the new fleet system, as the sector in the oil fields tended to shift from individual transportation of employees in vehicles to buses, that transport employees from the area of residence to work sites, where employees have been accustomed for many years to use vehicles to move between these two areas, but the management decided to implement a fleet transport system (poolcar system), but once a new technology is applied, the employees will try to reject this system, and this is the nature of human beings in accepting their stripping of what they think is their right, the new fleet management will face a difficult task to implement such a project, The employees will not accept it easily but they need to enforce this in some way to allow this project to succeed. Once a person gets used to having a vehicle that he rightfully considers on-site all the time, it will be hard to take it after he has been using it for so many years but leading by examples will be the easiest way. For example, if senior managers use fleet management for bus transportation the rest of the employees will find it easy to accept it over time, the organization will reach the goal by persuading people to accept the new change, On the other hand, this system will enhance the use of vehicles. Create a center for all site vehicles and monitor it with systems such as IVMS, fuel consumption, mileage, and material control team, and this system will lead to the actual and accurate use of the vehicles where it can be followed up more accurately and faster, as the main idea was to have the vehicles under the poolcar system, If the employee wants to visit Worksites or for external work, it is possible for the employee to request a vehicle from the poolcar system, and his request is approved by his line manager and the fleet commander to ensure their real need for this vehicle is there, such a system will save a lot on the organization and will maintain vehicle consumption and reduce its impact on the environment as Using fewer vehicles leads to lower carbon emissions. Over time other oil companies will decide to implement poolcar system, as they will see the great benefit of implementing such ideas.

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