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| HUMAN ELEMENTS IN IT STRATEGY FOR MRO  Report by: yourname\_SWE441\_IP1 |  |

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# **Project Outline**

## **1.1 Introduction to organization**

Now a day’s aviation industry is one of the most growing industries in the world. Aviation industry is broadly classified into two major segments, first segment is the manufacturing of aircrafts and second segment is maintaining the manufactured aircraft in airworthy/flyable condition.

Our main focus of interest will be on Maintenance organization for human elements in IT strategy with a goal of establishing better productivity for the organization as a whole. Aircraft maintenance is the maintenance activities done on aircraft according to the tasks mentioned by aircraft manufactures and component manufactures to ensure the continuing airworthiness of aircraft. Each Maintenance organization consist of several departments to carry out whole maintenance activities. GMR Maintenance Repair and Operation (MRO) is one amongst several MROs based at India, consist of following departments.

1. Production and planning department
2. CAMO (Continuing Airworthiness Management Organization)
3. Quality department
4. Base Maintenance department
5. Line Maintenance department
6. IT department
7. **Production and planning department**

This department keeps record of all the parameters regarding maintenance activities such as time since last maintenance for each aircraft, cycles since last maintenance for each aircraft and as per the manufacturer requirement plans for the next maintenance activities of particular aircraft.

1. **CAMO (Continuing Airworthiness Management Organization)**

This department is the soul of MRO. It continuously keeps track of all the documents provided by manufacturer as well as vendors for updated maintenance tasks, plans different health checks for aircraft and ensures that all the required maintenance activities are carried out according to the maintenance documents from manufacturer.

1. **Quality department**

Quality department ensues that all the maintenance activities taking place inside MRO are following certain guidelines setup by the Director General of Civil Aviation (DGCA) which is the governing authority in INDIA. It keeps all the records of Maintenance activities and provide it to DGCA when and where required.

1. **Base Maintenance department**

Aircraft undergoes heavy maintenance in this department. All the necessary documents are provided to the AMEs (Aircraft Maintenance Engineers) for the reference purpose.

1. **Line Maintenance department**

Light maintenance activities are performed prior to the arrival and departure of aircraft from airports. This department takes care of all inflight shutdowns and emergency related issues occurred during flight.

1. **IT department**

This department continuously monitors all the activities in the organization and provides solution for effective and timely solutions to problems. We will encounter numerous examples and how human elements in IT strategy are affecting the performance of the organization later in this report.

GMR has several MROs placed all over India like at Hyderabad, Delhi and Vishakhapatnam.

# **Human Factors and Productivity**

Human factors and how they affect people are very important to aviation maintenance. Such awareness can lead to improved quality, an environment that ensures continuing worker and aircraft safety, and a more involved and responsible work force. More specifically, the reduction of even minor errors can provide measurable benefits including cost reductions, fewer missed deadlines, reduction in work related injuries, reduction of warranty claims, and reduction in more significant events that can be traced back to maintenance error.

1. **PEAR model of Human Factors in IT strategy**

Human Factors can be broadly categorized into four main areas.

P-People

E-Environment

A-Actions

R-Resources

1. **People** – This factor relates to the suitability of the personnel for the particular task. It contains several aspects like physical, social and cognitive. Suitability should be both in terms of technical ability as well as competency, leadership skills, followership.



1. **Environment**- Environment is the workplace where person works. It is not only the physical environment but also the organization itself. Environment contains several aspects such as lighting in the workplace, temperature also plays very important role causing to fatigue also noise level in which work is taking place. Several environmental human factors are enlisted in the following figure.



1. **Actions**- Actions is the factor which will decide the effectiveness of the personnel for the given task. In order to increase the productivity person has to have sufficient knowledge of the system also should possess the required skill set for the assigned task. Actions is the set of work instructions to follow to achieve greater goals. Actions are enlisted in the following figure.



1. **Resources**- Resources as the name suggest, is the source of required information. Resources are the means by which IT specialist gets the required information for completing the required tasks. It also contains training activities.



# **Success factors in the IT organization**

IT department of an organization not only provide computing solutions but also increases the organizational productivity by considering their operational and strategic organizational needs. Organization needs to achieve the set targets and goals so IT department set their solutions and priorities to help organization achieve the same. There are number of such success factors.

## **3.1 Organization requirements analysis**

IT department’s exposure to organization allows to find organization needs that should be the key drivers behind most ongoing operations. IT personnel are best positioned to frame projects, infrastructures, and systems according to the needs of the organization. The success of IT is judged on how it helped in meeting organization objectives.

## **3.2 Open communication lines**

IT departments and their organization counterparts should set up a communication system that actively involves all stakeholders. This allows IT to get a feedback from the organization side to formulate the best solutions possible; on the other hand, an open communication line with their technical counterparts familiarize organization decision-makers to identify and take advantage of the available technical knowledgebase for better organizational and market performance.

## **3.3 Expectation management**

Both organization and IT should be realistic about their expectations and can be achieved through the two mentioned success factors: communication and requirements. Communication between these two parties conveys great source of information and let each other know about the changes necessary. Communication is one of the best means to deliver thoughts and information. Requirement is the need of the organization which should be fulfilled in very effective way. IT with the help of communication gets to know the requirements and thus helping with finding solutions.

# **People, Processes, and Technologies**

People, Processes, and Technologies framework is used to improve the organizational efficiency using the manpower in organization as tool.

## **4.1 People**

People refers to the human resources available at the organization’s disposal. It is the main source of workforce for any organization. Selection of right people for the organization is very important task. Organization needs to identify their key employees. Criteria may vary depending upon organization need such as skills, experience, and attitude for the required job.

Working in MRO industry is full of challenges as it requires dynamism at its peak. So as to understand the need of the MRO the IT personnel should be wary of aviation background as well as basics of the technicality in the aircraft. As person will be dealing with the large source of information, one should be good with communication so as to understand organization needs and to deliver it to other team members as well. Understanding the needs will help to find the perfect solution.

## **4.2 Processes**

A process is the steps or actions that combine to produce a particular goal. Every organization is having a final goal to achieve, the process is the part which gives answer to the question “how to achieve desired result?” Process takes all the resources available at the organizations disposal and fits them in a particular manner to achieve the desired results.

In MRO the maintenance of airplane starts from the planning phase, where everyone gets to know the depth of maintenance to be carried on. Next comes the details of the MPD (Maintenance Planning Document) which are analysed by CAMO division and sent to respective maintenance division such as either base maintenance or line maintenance. Segregating the information in very accurate way from MPD is the main challenge which IT experts can do with the help of technology at their disposal. While carrying out maintenance on aircraft AME (Aircraft Maintenance Engineer) needs to keep track of work done along with the next work to be done. All the material required as well as tools required is also part of information AME needs to provide an attention to. So with the help of IT personnel organization needs to find alternatives to reduce the workload on individual.

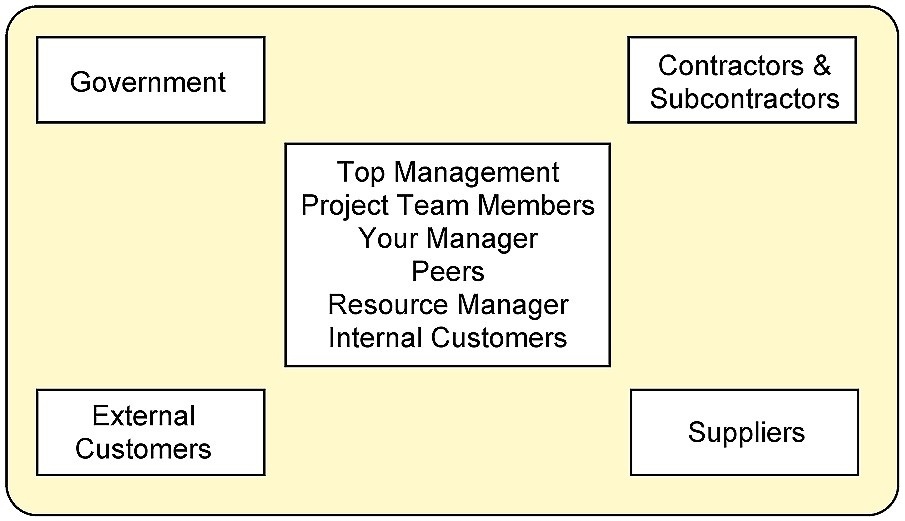
## **4.3 Technology**

The technology provides the tools that the people can use to implement the process. Now a days in most of the organization the main challenge for technology is to automate the processes going on in organization. Automating the processes reduce the time requirement for particular task as well as reduce the manpower required hence improving the cost effectiveness as well as productivity.

In MRO industry need of technology is increasing day by day as the load on the AME. As automation in aviation is taking place there is a need to reduce the load on maintenance personnel so as to reduce fatigue and to improve productivity. Technology is the tool by which excess load onto the personnel can be reduced.

# **IT project stakeholders**

Key stakeholders can make or break the success of the project. Even if all the deliverables are met and the objectives are satisfied, if your key stakeholders are not happy then nobody’s happy. Project sponsors are the executives of the organization which will allocate the required resources. Sometimes government can also be a stakeholder because if it is related to the safety of nation, government can take part in he resource allocation and take part as a stakeholder. For public enterprises public is the stakeholder.



**Fig: Project stakeholders**