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Master of Business Administration Programme

Information Technology For Managers
TM5013

Case Study 5
Singapore and Malaysia Airlines Expert System

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Why do Airlines need optimization system for crew scheduling?

Optimization system for crew scheduling is used in airlines for the following reasons:

- To improve the quality of service provided.
- To keep costs down.
- To Improve both customer and employee satisfaction.
- To ease the scheduling process

- To improve the quality of service provided.

The optimization system automates the tracking and scheduling of the flight crew's timetable. This is extremely important to the airline because by having an optimized timetable flight crews can have enough rest allowing them to provide better quality service. An airline that does not have an optimized time table for its crew will end up over working its crew which will eventually lead to bad customer experience.

- To keep costs down.

Another reason why optimization system is used for crew scheduling is because it can be used as a tool to keep cost down. The optimization system try to fully maximize the human resource available without overworking them. When resources (crew) is fully utilized, no additional resources is needed or no resource is put to waste

- To Improve Both Customer and Employee Satisfaction

When a crew has an optimized schedule or time table, he or she is not over worked allowing her to provide better quality service which leads to customer satisfaction.

Again an employee that is over worked or overloaded with task will not able to perform at his or her best which will eventually lead to bad customer experience

- To ease the scheduling process and to prevent disruption of service

It is not unusual for an airline system to have hundreds or thousands of crew or employee working. The thought of needing to schedule all the crews time table is

enough to scare anyone away from the job. Apart from that during emergency when a crew suddenly calls in sick, it is impossible or extremely difficult to find a replacement as the coordinator or manager might not know who is not working and who is working. By using an optimization system, the time table is created automatically and also optimizing the resources available.

What Role can Expert's knowledge play in this case?

With reference to the case, an experts' knowledge can play the following role

- To help make faster and better decisions

One of the main reasons why an Expert's system is implemented in such scenario is because of its ability to help or make decision in a timely manner. Apart from that the advice given by the expert system is consistent and is made based on the database of knowledge it has retrieved or collected. For instance when a potential disruptive situation occurs in SIA, the expert system will then refer to the knowledge stored in the database and advises on the best course of action.

- To optimize

Apart from using the expert's knowledge to make decision, the experts knowledge can also be used for optimization purposes. Usually the system takes into consideration all possible configuration in order to derive the optimal solution or decision. For example the system implemented by Malaysia Airlines takes into consideration the working rules, regulatory requirements and crew request to come out with the optimal monthly crew roster

- Coordination

Another role the experts knowledge can play is the role of a coordinator. Using the experts knowledge, the expert system coordinates the daily operations by automatically assigning task to all the flight crew and also produces the monthly crew roster.

What are the similarities between the system in Singapore and Malaysia

- Both the system implemented by Singapore Airlines and Malaysia airlines uses the web as their platform.
- Both the system focus on automating the crew scheduling process
- Both system also focuses on optimizing the flight crew utilization.