

Grounds supply chain Management

Axe 3 : Supply Chain Management

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Abstract— Supply chain includes cycle process of a product or a service, and the distribution of finished products to the purchaser through a network of distributors. Airlines are involved in the various stages of this process that every part is linked to one another through a supply chain. In order to facilitate the flow of passengers in airports, and improving an appropriate informational process, between ground operators and customers. We can exchange information between all parties of the appropriate planning to meet current and future needs. Essential stages in developing a successful Airport supply chain will be cited. Ground handling logistics naturally deliberates to events that occur inside an airport, managed by an airline company or a handling entity. Airport supply chain refers to the organization of passengers flow from booking a ticket to arriving at the final destination. In fact, the process is to coordinate different operations including passenger's check-in progression, baggage treatments, ground service equipment control and passengers relationship management. Supply chain management (SCM) acknowledges all of traditional logistics and also includes Marketing techniques, optimizing and performing passengers and baggage flows.

Résumé— La chaîne d'approvisionnement comprend le processus de cycle d'un produit ou d'un service, et la distribution des produits finis à l'acheteur par l'intermédiaire d'un réseau de distributeurs. Les compagnies aériennes sont impliquées dans les différentes étapes de ce processus et chaque partie est liée les unes aux autres à travers une chaîne d'approvisionnement. Afin de faciliter la circulation des passagers dans les aéroports, et d'améliorer un processus d'information approprié, entre les opérateurs au sol et les clients. Nous pouvons échanger des informations entre toutes les parties de la planification appropriée pour répondre aux besoins actuels et futurs. Les étapes essentielles du développement d'une chaîne d'approvisionnement aéroportuaire réussie seront citées. Logistique de manutention au sol délibère naturellement à des événements qui se produisent à l'intérieur d'un aéroport, géré par une compagnie aérienne ou une entité de manutention. La chaîne d'approvisionnement de l'aéroport fait référence à l'organisation du flux de passagers de la réservation d'un billet à l'arrivée de la destination finale. En fait, le processus consiste à coordonner différentes opérations, y compris la progression de l'enregistrement des passagers, les traitements des bagages, le contrôle de l'équipement au sol et la gestion des relations avec les passagers. La gestion de la chaîne d'approvisionnement (SCM) reconnaît toute la logistique traditionnelle et inclut également les techniques

de marketing, l'optimisation et l'exécution des flux de passagers et de bagages.

Keywords—Logistics; Airport Supply chain; SCM; Airport handling; Airlines Strategies

I. INTRODUCTION

Supply chain management programs integrate items from the beginning of production process to the last part of it. Making plans, inventory management, forecasting, ordering, customer service process and reducing costs, all represents for airlines an ultimate goal in an extended supply chain which is the subject of this lecture. The focus will be on ground handling management as in important part which could direct an Air company out of the game if it is not good and efficiently monitored.

To remain competitive, airlines must seek new strategies and forward their customer's needs. It is well known in business discipline, and in order to keep increasing revenues and market share, an enterprise has to match completely to customers' explicit and implicit demand. Nevertheless, one of the inefficiencies in ground cycle process is the existence of unnecessary habits which is the result of inadequate decisions.

This lecture is taking in consideration the process from the first contact with passengers in an Airport, check-in steps, boarding process management and finally an immense attention will be upon optimizing turnaround time, which is the phase of handling a flight on the ground in the case of continuous rotation.

II. GROUND COST MANAGEMENT

A. Ground supply chain description

Before starting our analysis, it is important to describe the main components of an airport operations related to an airline activity. Actually, this supply chain study is drawn following passengers steps when traveling by Air; the objective is to identify different inefficiencies in all operations. Check-in counters are usually the point where the first contact takes place with passengers, it is a process which regulated by an opening and closure time that should absolutely

be respected whatever difficulties confronted. Passenger pre-flight preparation in accordance with policies prior the opening of check-in is required with necessary data and materials needed, managers have to review passenger lists with all special requirements and to prepare logistics items before the opening, also preparing seating for families traveling with infants to avoid any blockade later when being on board. Prior the opening, display signage, dangerous goods notifications, check-in queues, carpets and baggage sizers must be prepared.

Through check-in, security and safety measures consist of verifying travel documents and detecting any risk for aviation activities to be compromised intentionally or without previous preparation, this part of the process is a challenge for ground operators when turning on time should be respected but with taking in consideration aviation security and safety. Agents should be trained and qualified in profiling techniques applicable in parallel with customer service requirements. Certain categories of passengers may be refused travel for many reasons, which cause disruption and blockade in lines, also problems related to oversized baggage must be treated with professionalism without any impact on check-in allowed time.

The following phase in the Supply chain is boarding. In fact, locating passengers at gates is not an easy task, and many flights are delayed because of missing passengers and applicable security procedures for removing checked baggage of passengers who checked-in but fail to board. The experience has revealed that this case is avoided when an efficient communication is established with customers from the first contact at check-in counters, by ensuring everybody is notified about the importance of being on time at the boarding gate, it should absolutely be clearly mentioned on boarding passes.

B. General cost management

All travelers need to receive an adequate treatment and their baggage weighted and labeled even those representing irregular situations. Many operators in the world of aviation, has adopted some good habits in performing and reducing

costs in that part of the supply chain, going even to eliminating the print of boarding passes and asking passengers to issue them in a paper format.

Suppose one printed boarding card costs 5DH, for an average of 100 flights per day and 200 passengers per flight, costs will touch 36.5 MDH in one year. Lost also exist when customer agents are not trained in saving resources by preserving work tools such as unused boarding passes, bag tags and other materials. The experience has shown passengers adherence to this process and how it is making easy for them to confirm their flights before coming to the airport, it also prevent congestion in some points where profiling operations are not allowed, which means gain of time and reducing queuing lines. It goes further than that; many airlines are using those boarding papers as an advertising interface for different products (onboard sales, rent cars, hotel accommodations ...)

Ground supply chain includes irregularities which are delays, cancelations, overbooking or other special cases occurred for different reasons. Consistent delivery of information is the key of performing disruptions in airports, with providing passengers all about their rights according the aviation regulation and customer relationship management recommendations. Furthermore, management of irregularities in ground services reduces costs when it is conducted efficiently.

Many studies has been conducted in the ways for reducing costs, in particular for Airlines in order to meet different variables nowadays, some are negotiating low handling prices in dominant position, but such a domination is a result of a set of efficient policies and improved yield management.

Point to point flights refers to a transportation system in which a plane travels directly to a destination, rather than going through a hub. This is done without changing aircrafts to reach a destination neither checking baggage to more than one airport. The point to point model is used for several reasons, airlines operates often in smaller airdromes to avoid congestions, to pay less taxes and specifically to insure a short TURNAROUND time on the ground.

III. OPTIMIZING TURNAROUND TIME

A. *Management in ground services*

Turnaround in aviation is the process and time needed for, unloading, loading and servicing and aircraft on the ground or usually parked at a terminal gate of an airport. This operation is decided according to different elements to complete the following activities:

- Cabin service: cleaning takes a lot of time, in particular when catering has been provided in previous flight, this task is usually improved by ground service providers but some airlines has thought to contribute it to cabin crew members, to achieve in time performance and to reduce airport handling fees.
- Catering: means loading food and drinks for passengers and crew staff. Low cost companies have eliminated providing free foods onboard for many practical reasons, including the impact on turnaround performances. The process also includes unloading of unused food and drink from the aircraft, some airlines offer their own food, while others outsource catering to third party companies.
- Ramp services : Among the process also “ramp services”, it comprises handling passengers from check-in desks to boarding into the aircraft, baggage treatment from the point of collecting to being loaded into holds, refueling, ground service equipments, de-icing and other services. Less the company minimize the use of those services less ground fees are reduces.



Fig.1. Time, quality and cost dealings

B. Turnaround time and Cabin crew rotation

Airlines around the world differ in determining duty time of their cabin crew members; actually it is the period that flight attendants are on duty, from the moment they report to the moment they are free of all duties. Legally, there is a specific system adopted by local aviation authorities and imposed on Airlines. It is also specific when hours cannot increase beyond the schedules time.

Airlines agree to divide passengers (in theory) into groups, each 50 needs one flight attendant. For example, an Airplane which accommodates 140 passengers requires at least tree cabin crew members.

Flight duty period = positioning (prior to flight) + duties including turnaround time + flight time + post flight duties (not less than 15 minutes after end of flights)

In reducing unnecessary activities on the ground, turnaround time which is a part of the calculated duty period will routinely be lowered, the following schema explain clearly how an Airline could prevail a rotation when it reduce turnaround times on

airports:

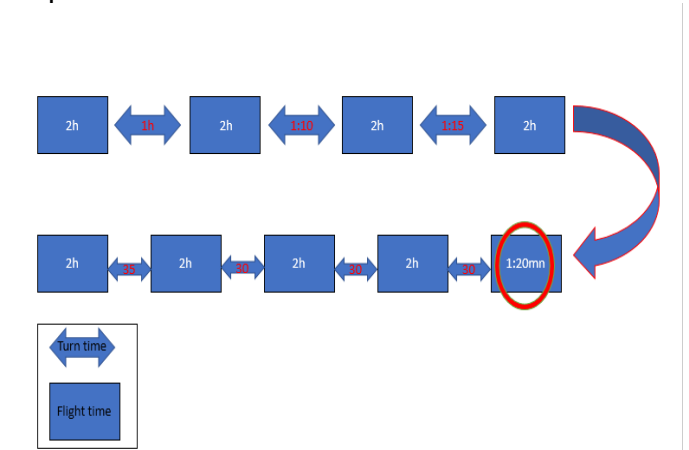


Fig.2. Reducing turnaround time and cabin crew rotation

The purpose of this is to exploit time remaining in other rotations, as surrounded in red. Cabin crew here, should be aware about the importance of applying minimum time on the ground and adhere to the process with complete implication.

IV. OTHER ISSUES OF THE SCM

There are many concepts of supply chain management that have been developed in contexts of aviation services, with a dynamic of flow and regular massive flows. But today the service activities continue to grow and their supply chain often presents characteristics, especially because of the large demand, forcing operators to look forward competitive strategies.

Efficiency involves many issues, such as customer relation management, quality, service, reliability, control of costs and fixed assets, with often risk management and security. This context is essentially marked by events random and not exactly repeatable, for which service and supply processes cannot be deterministic: how to detect inefficiencies and submit a quality process?

Thus, in a traditional supply chain of airports, the main constraints will be for example the optimized management of storage and work tools, or different ground service equipments used when

servicing on the ground. In a service supply chain, new constraints will be added, which concern both the availability of skills that access to data when technicians are on the ground, or visibility the current configuration of the equipment (and not only on their manufacturing nomenclature).

The number of material references to be managed is often higher in a service supply chain than in a traditional supply chain: from ten to a hundred times. Moreover, given the diversity of equipments to maintain. The methodology to apply must therefore in accordance with international aviation regulation.

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