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AIRPORT CHECK IN FACILITY- SAFETY ISSUES BEHIND THE CHECKING PROCESS

By

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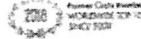
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I hereby give my acceptance to guide the above student through the Dissertation work Titled :"A STUDY ON AIRPORT CHECK IN FACILITY-SAFETY ISSUES BEHIND THE CHECKING PROCESS" which is a mandatory academic requirement for the award of the BBA Degree.

Thanking you

Yours Sincerely

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EXECUTIVE SUMMARY

Airport rider terminal operations embody all the activities that passengers can experience within the field from being processed through boarding to the plane and therefore the alternative services out there at the terminal facility. The consistent will increase in rider rates have had major effects on these procedures among the world's airports and have caused bound issues for depot operations. This paper provides a quick introduction concerning field rider terminals and their operations and identifies many oftentimes ascertained issues that exist among the airports. additionally to distinctive the outcomes that have resulted from every of those problems, several suggestions or suggested solutions are provided. These recommendations are supported analysis and studies out there within the literature. Relevant sources that are utilized in the literature embody books, journal articles, official aviation or field related reports, and on-line news articles.

Chapter 1: Introduction

• Overview

Airport passenger terminal operations have several problems frequently observed in many airports. What are some of the common problems of terminal operations? Based on growth and development, increases in the number of passengers' and aircraft movements, airport terminal operations have had to adjust many of their procedures and implement different services for passengers, especially when they are being processed at airport terminals (Sorenson, 2015; Tošić, 1992). Problems that are commonly observed inside airport terminal buildings as a result of these increases in passenger's numbers are found in the terminals' check-in process, security procedures, and passenger walking distances, gates, and baggage claim (Hsu et al. 2012; Tošić, 1992). The purpose of this research is to identify the specific problems that impact airport terminal operations. It also seeks to explore the impacts that these problems have on specific aspects of passenger terminal operations. The question guiding this research is: What factors impact airport passenger terminal operations? Numerous factors can be considered problematic in affecting airport terminal operations. There are some problems which are consistently shown to cause the most concern and pose the most difficulty for airport passenger terminal operations. Since operating passenger flight is the airports' essential duty, defining and investigating the problems that affect flight operations and finding adequate solutions for these problems is fundamental for improving airport terminal operation. Exploring this research question, this research is organized as follows. Following chapter one of introduction, in the second chapter, the literature review presents a background of the related aspects that involve in the problems of airport terminal operations. Through the different 2 sources used in this research paper, an introduction can be provided for each discussed problems clarifying what are the areas where problems of airport passenger terminal operations can be observed. In the third chapter, the common problems of airport terminal operations can be identified and explained. The outcomes and suggestions or recommendations for solving each problem have also been addressed. In the fourth chapter, a case study about examining gate availability issues at Dallas Love Airport has been presented. The case study indicates how limiting airport terminal gates affect passenger terminal operations. The fifth chapter of this research paper is the conclusion. In the last section, a list of different reliable sources has been shown in the reference section. This research paper can be important for airport operators and airlines since it presents the commonly observed problems of airport terminal operations. Through introducing each of these common problems,

airport operators, including the managers or executives, and airline personnel can be more familiarized with these problems and encouraged to find more solutions. This research paper is a well-documented collection of airports terminals' common operational problems, outcomes, and given recommendations from many professional sources. Since many of the world's airports are public organizations, dealing with any of the airport's operational problems means a concern(s) for problems of public administration. In spite of giving all of the factual observations within airport terminal operations, this research paper can raise many questions regarding what can be the main reasons behind existing the common problems of airport terminal operations. This should encourage public administrators to look for the best recommendations through implementing the most suitable organizational theories for airport management as part of the public service management.

Objectives

The main objective of this assignment is to identify safety issues in the process of ground handling and explore solutions. A further breakdown results in the following underlying objectives:

- Identify and assess the safety risks in ground handling; by
    - Identifying actors involved in ground handling;
    - Investigating the role of the various actors in the accident/incident cause;
- Explore solutions to improve ground safety;
- Investigate the institutional aspects of ground safety.

Customer Expectation vs Customer Satisfaction

Customer expectations are the totality of those needs and preferences, both tangible and intangible, which customer brings to bear on the supplier of goods and services (Denham, 1998). Joseph C. Andraski the President and CEO of Voluntary Inter Industry Commerce Solutions (VICS) Association stated that customer expectations are the needs, wants, and preconceived ideas of a customer about a product or service. It can influence a customer's perception of the product or service and can be created by previous experience, advertising, hearsay, awareness of competitors, and brand image. Customer satisfaction defines as an emotional state, their post-purchase reactions can involve anger, dissatisfaction, irritation, neutrality, pleasure, or delight (Lovelock &.Wright, 1999). As shown below, if customer's perception is better than expected,

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satisfaction level will be at the highest level but if the service experience is less than the expected standard, the customers will dissatisfy with the lowest satisfaction level

How the airport management perceive their performance may differ from how the customers perceive it. If customers view the airports as unresponsive, then they are unresponsive — in the customers' eyes. It merely emphasizing that customer satisfaction is driven by their perceptions, not the service providers. One way to exceed customer expectations is through surprise – dazzle them with something beyond expectation and extraordinary would be a powerful tool in the quest to satisfy customer. Raising customer satisfaction may lead a rise in customer loyalty and retention, therefore airport can increase good customer. In managing customer expectation, airports must continually measure and improve how well they meet customer need. Three major steps that are involved in this process is understanding customer needs, obtaining customer feedback and instituting an ongoing program to ensure customer satisfaction

figure 1 baggage scanner.

Evolving passengers expectation

Airport operations and business models have evolved dramatically over the last two decades due to deregulation and privatisation which created an efficient air transportation ecosystem. Not so long ago, airport management were responsible for the infrastructure that supported air transportation and airports were viewed as public utility. In recent years, the passengers' expectations have grown considerably especially in regards to quality of service. Privatisation has transformed airports to deliver safe and secure operations, raised standards of customer service, and into meeting growing demand. Over the past two to three decades, airports have gained more stakeholders, with increasingly complex operations. The transformation of airport customer service began in the late 1990s, where passengers have raised the bar of their

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expectations on airports services and facilities, courtesy of airport staff, security clearance, availability of baggage carts, cleanliness of washrooms, clear signposting and comfortable waiting areas. The demand of air travel with lower cost has caused the emergence of low-cost carriers that affect the passengers' expectation towards airports services. A study on the influence of passengers' demographics on airport attributes has indicated that 95% of the passengers who travel for the purposes of other than business (i.e. leisure) are more conscious of the cost of travel (Carstens & Heyns, 2012). Generally, passengers expected the same standard of service at the airport regardless of how much they paid for their tickets. Nevertheless, safety is a non-negotiable issue and it should meet some important standard of service quality. Today, a new type of passengers category has been created; the air travellers that have been empowered by end-to-end passengers' self-service solutions. They want to self-process and expect easy access to all the information they want, exactly when they need it. This emerging new breed of airport that attract new segments of commercial customers and may even develop a unique brand identity as it offers smart services for various areas.

Performance measurement on customer satisfaction

Today, airports all over the world are competing in a complex business environment. The complexity of the airport business environment has been further defined by ACI 2013 Airport Economics Reports as an industry that operate in a unique and evolving physical, financial and regulatory environments. A comprehensive set of performance measures must be established, as the airport management will need some key indicators to help them in developing the overall framework of strategic customer management system. Kaplan-Norton has described that the ability of a company to mobilize and exploit its intangible or invisible assets has become far more decisive than investing and managing physical, tangible assets. Customer relationship management has been recognised as an intangible asset that will enable the organization to retain the loyalty of existing customers and enable new customer segments and market areas to be served effectively and efficiently.

Linking to Business Objectives

The performance measures of an airport can be derived from the mission and strategy that later can be translated into tangible objectives. In focusing the specific objectives that can enhance customers experience, the airport management must highlight those processes that are most

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critical for achieving outstanding customer service and start to develop the execution plans. Then, the objectives should be communicated throughout the organisation via all communications carrier such as email, bulletin boards, videos and websites. The communication will give signal to all employees that all the objectives must be accomplished if the airport's strategy is to succeed (Kaplan & Norton, 1996). Malaysia Airports new vision – "To be the global leader in creating airport cities" supports the airport city master plan – dubbed KLIA Aeropolis, a diversified and integrated city with comprehensive facilities for retail, exhibitions, leisure and tourism activities. A new mission – "Together we create joyful experiences by connecting people and businesses" – was created to support the achievement of the vision and becoming a world-class airport business. The connectivity is essential as Malaysia Airports business is about connecting people to the world, and to their lives and dreams. "Malaysia Airports Runway to Success (2010-2014)" is a document that charts the business direction of Malaysia Airports and the road map to get there. As service excellence is central to the business, it is possible for the airports to provide new YE201503 Managing Customer Expectation For Passenger Service at Airport 6 | P a g e experiences and world-class service standards to all customers. Malaysia Airports has also established initiatives for enhancing customer service and overall passenger satisfaction. All these initiatives can be achieved by improving the operational processes and efficiencies by leveraging on new technologies and best practices, implementing Conditions of Use contracts with airlines customers and developing people to ensure the delivery of the highest service standards (Runway to Success, 2010). As shown below are the business goals and objective of Malaysia Airports to support the organisation towards providing excellent service to the customers.

Key focus areas in managing passengers' expectation

A unique travel experience is the key element in addressing passengers' expectations as each journey comes from many different priorities and concerns. In creating this unified passengers' journey, the airport's role must evolve from passive landlord to active participant, enriching the passenger journey as a key ecosystem partner. Each passenger will have different expectations towards airports services and facilities. It is almost impossible for airports to address all the demand and need of all passengers at once but the airport management need to actively analyse the common similarities before implementing the improvement strategy in managing the passengers' expectation that will enhance the overall travelling experience. Imagine a traveller

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departing from an airport for a long holiday. She arrived at the airport, and proceeds to check-in her baggage. Her expectation on airport service quality has started beforehand – from how to access the airport until boarding the aircraft. The key areas that have been identified and need to be focused in managing the passengers' expectation in order to obtain the highest level of customers' satisfaction are – passenger processing, safety & security, airport facilities, airports staff and customer feedback management. ASQ 2013 Reports had highlighted that the highest top ten elements for Malaysia Airports are short duration of waiting times, courtesy and helpfulness of airport staff (check-in, security, and immigration), availability of facilities and flight information screens. Malaysia Airports is continually reviewing new solutions to enhance operations to make air travel a seamless experience for passengers. Three key initiatives to achieve this in the near to medium term are harnessing technology to reduce passenger processing time and effort, ensuring safety and security and enabling easy access to and from our airports.

Safety & Security

The importance of ensuring safety and security in an airport cannot be over-emphasised especially in providing passengers with a safe and seamless experience. The airport management must also ensure that a wide array of safety and security considerations of the passenger are met by working closely with the wider airport community. Large numbers of people pass through airports every day, therefore airport security serves to prevent any threats or potentially dangerous situations from arising or entering the country. Passengers' expectations of airport security are related to waiting time required for security check, the professionalism of the security staff and the ability of the security process to make them feel safe. In 2008, Malaysia Airports has been ranked in the top five for ASQ elements - 'courtesy and helpfulness of security staff', 'thoroughness of security inspection', 'waiting time at security inspection' and 'feeling of being safe and secure'. The security improvement initiatives include instituting Malaysia Airports' in-house detective task force, reconfiguring passenger flows at some existing terminals to segregate departing, arriving, international and domestic passengers, upgrading security systems and detection equipment which are due for replacement at smaller airports and installing CCTV systems with behavioural analysis capabilities (Runway to Success, 2010). Pilferage is also another customer sensitive area and to address the issue, Malaysia Airports had come out with a few initiatives – established task force working in close cooperation with both the police

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and airline security, installation of additional CCTVs at the baggage handling system conveyor belts, constant spot checks on baggage handlers, increase in manpower to guard passengers' baggage and increase in patrolling frequency (Runway to Success, 2010). The impact has improved since 2002, where reported pilferage cases is far below the global average of 80 bags per 100,000 passengers. It was much lower than the global average and the number of incidents continues to decrease on a downward trend. The figure shown below is the reported number of pilferage cases from 2002 to 2008.

Utilization of "Frill Items"

Payload lashes are for the most part used to anchor vast/substantial items that are not suited for limitation by a freight net. They are additionally used to anchor substantial things stacked inside a holder subject to specific conditions. Freight lashes are ordinarily of 2 composes:

- 2000 lbs breaking strain lashes having webbing around 1" (2.5cm) wide and single stud connection fittings at each end; and

- 5000 lbs breaking strain lashes having webbing around 2" (5.0cm) wide with snares as well as twofold stud fittings at each end.

Secure fittings are for the most part a twofold stud with a 2" dia.welded treated steel ring. These might be utilized to interface a secure lash ended just with a guide into the bed edge rail. They are not to be utilized as "impermanent repair" for payload nets, nor as some sort of extra lashing procedure. The two ties and secure fittings may just be regarded safe when issued by the proprietor aircraft. The utilization of a lash or fitting got from the floor of the terminal is hazardous. At present there is no accreditation standard for ties as there are for holders, beds and nets, anyway a standard is in process and anticipating FAA execution.

Customer Feedback Management

Managing customer feedback can help to identify areas that may have missed the mark in any part of the customer journey. Airport management use a variety of methods to collect feedback from customers – with the use of social media, website, android and tablet apps, email and

manual medium such as customer feedback forms. Listening and responding to customers feedback are given a high priority and sometimes is the main method of communication between aiports and their customers. All the feedbacks – whether complaints, comments or compliments will be followed through. Customers must also be notified on the status of their comments or complaints. In 2013, Malaysia Airports has established a new unit called CARE (Customer Affairs and Resolution Excellence) to better serve the public and travellers and to further enhance the pursuit and delivery of service excellence in line with the ultimate objective of growing the business and to achieve the company's revenue target. CARE's objective is to provide a centralised platform to manage and respond to all enquiries, complaints and feedback received across multiple channels. A new Customer Relationship Management system was also implemented to track and monitor the service levels expected by the customers and stakeholders. Malaysia Airports introduced the Chat@KLIA – a live chatting system that is hosted on an online platform - to harness the power of customer feedback and also empowers the staff to respond instantaneously to customers' needs and initiate any service recovery. In addition, corporate website and social media such as Twitter, Facebook and Youtube are also being used as a platform to listen to customer feedback and updating passengers on airports news and activities. All of the feedback will be channeled to a centralised database before being sent to the respective parties. The time needed in order to respond and resolve the issues are based on the agreed service level agreement in achieving consistency on managing customers' feedback. Source: www.malaysiaairports.com.my, Malaysia Airports Facebook Many airports introduce customer service ambassadors to offer assistance to passengers. They will operate the help desk and welcome centres and sometime will be equipped with tablets to access real time information. Ambassadors will usually serve as primary contact for passengers with strong multi language proficiencies. Malaysia Airports CARE Ambassadors are stationed in key areas in klia2 to provide help and proactively seek passengers who may need assistance. They are known as an integral part of customer service and are trained to help passengers and getting customers' feedback on the terminal facilities and services. In addition, a mobile and interactive tablet-based customer service application called i-CARE is also being deployed at all international airports to further facilitate the customer service engagement.

Airport branding

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The airport is not a destination for air travellers. It is a transition point by connecting people with business and also their love ones. Effective branding strategy provides a positive impact on airports' financial performance and image. Understanding the economic value of the brands and the resulting revenue, impacts that branded customer experiences provide. An airport's brand is the sum total of all the customer experiences at an airport, as perceived by the customer and stakeholders. Airport brands can be formed either ad hoc - formed by the customers' perceptions of the typical experiences or strategic - defined and managed by the airport operator in collaboration with its stakeholders, business partners and airport employees (Paternoster, 2007). The brand represents the airport's promises to its customers. The best airports in the world generally adopted the strategic brand category. The brand will exist in the customer minds and it will reflect in the thought whenever a customer thinks about a particular airport. An airport's logo, tagline and advertising are not the airport's brand but rather should be representations of the brand. Changi International Airport is known for its successful strategic airport brand. Its management clearly understands the power and the value of their brand, as everything it says or does is consistent with the brand. By winning over 250 awards, it has been recognised by customers and stakeholders as an airport that is keeping its promises.

Chapter 2: Literature Review

Airport terminals are buildings that contain several essential facilities. in keeping with value and Forrest (2016), the air terminal is that the airport's main traveller building; it starts from the terminal pavement and extends to the screening stop, together with the concourse on the far side the screening stop. Through a spread of procedures, airdrome traveller terminals will give numerous services for the airlines and their passengers. Graham (2014) reports that terminal services provided by airports embrace such things as security, customs, and immigration; they may also contain business or non-aviation facilities like retail stores, food and food areas, places for amusement, and web facilities. value and Forrest (2016) indicate that airdrome terminals contain facilities for airdrome passengers and baggage processes, airdrome maintenance and operational activities, airdrome and airline administration, and airdrome consignment handling.

Based on their prominence because the airports' main structure, the terminal buildings typically house operations that give special roles or services to the airlines and their passengers. Price and Forrest   (2016)   report   that the   foremost necessary role and performance of airdrome traveller terminals   involve   transferring   passengers   from   ground transportation   to transport so vice versa. Moreover, the air terminal is that the space that connects the field to the remainder of the airport;

it is the realm that makes a linkage between constituent and airside operations (Price and Forrest, 2016).

As the basic a part of associate airport's constituent services, terminals are often managed and operated by completely different parties. Hamzawi (1992) states that airdrome constituent isthat the space that consists of various zones like apron/gates space, depot building(s), ground access space, and vehicle parking areas. value and Forrest (2016) report that air terminal operations are often managed by either the airdrome operators through the airport-dominant approach, or European model, or by the airlines tho' the airline-dominant approach. each of those approaches consider providing employees to supervise terminal services and baggage and traveller handlingservices.

Large airports typically use a mix of those models so as to implement service delivery.This means that they use some aspects from every of those 2 approaches (Price and Forrest2016).The consistent increase within the volume of traffic has wedged airdrome operations.Perhaps, most significantly has been the popularity on the a part of airdrome operators to interact in more coming up with and analysis of their air terminal operations. in keeping with Hamzawi (1992),

there are bound times of the day once traffic peaks or is at its highest and busiest volume. This "daily" development typically leads to congestion at the airports' airsides and terminal buildings; the arrival of an enormous numbers of passengers might strangle the activities of immigration, customs, security management facilities, and lots of of the terminal services like baggage handling.

Sorenson (2015) suggests that simpler air terminal operations are often achieved byimproving knowledge assortment and analysis measures. This implies that airdrome managers will improve their overall performance by increasing their understanding of traffic flows and traveller knowledge which can then be wont to influence terminal planning; planners are imagined to specialize in the larger perspective of terminals as their essential mission.

Airport Terminal Design

There are different kinds of airport passenger terminal buildings in terms of design and operations. de Neufville and Odoni (2003) show that there are five basic configurations of airport passenger buildings. These five design types are called finger piers, satellites, midfield, Linear, 5 and transporters. These configurations can be suitably made for major airports by the attempts of designers. Consequently, airport terminal designers use several ways to make different shapes by taking different possibilities into considerations (de Neufville and Odoni, 2003). The five configurations of terminal buildings offer different shapes and designs to passenger terminals. The Finger pier configuration can be visualized or imagined as fingers attached to the palm of the hand; they are narrow extended areas from the central point of the passenger facility where aircraft can be parked and surrounded on both sides (de Neufville and Odoni, 2003). The Satellites configuration resembles the extension of T-shaped finger piers. In this design the gates are usually located at the end of the fingers (de Neufville and Odoni, 2003). According to de Neufville and Odoni (2003), midfield concourses can be either linear or Xshaped. They often

have separate passenger buildings approximately a kilometer long and have around 50 gates. These gates can be accessed by the passengers from the groundside. A linear building is a narrow structure with one side designed for aircraft parking and the other side faces roads and parking lot areas (de Neufville and Odoni, 2003). Transporters can include the busses that transfer passengers from certain terminal gates to the aircrafts that have been parked in the remote stands. These busses have been specially designed for passengers' movement, access, and baggage transfer (de Neufville and Odoni, 2003). In terms of functions and operational systems, airport passenger terminals can also be classified into different groups. Bandara and Wirasinghe (1992) present two categories of terminals: centralized terminals and semi-centralized terminals. In centralized terminals, passenger services such as ticketing, and baggage claim, and other passenger processing zones are located in the center of the terminal building(s) (Bandara and Wirasinghe, 1992). In the semicentralized terminals, passenger processing facilities have been separately distributed according 6 to groups of aircraft gates (Bandara and Wirasinghe, 1992). There are some factors that have their own impact on the configuration of airport terminals. One common factor is the distances passengers have to walk between flights or to the main terminal building: terminal walking distance. de Neufville and Odoni (2003) describe two matrices that are used by designers to analyze walking distances in the terminals. These two "matrices" are impedance and flow matrices. The impedance matrix is defined as the level of difficulty passenger's face while transferring between two gates inside the terminal building. This analysis measure basically gives a description about the facility's physical aspects or geometry (de Neufville and Odoni, 2003). On the other hand, the flow matrix delineates the volume of passengers based on information about their origin points and destinations. The flow matrix also identifies and analyzes such issues as the volume at specific gates or other access points in the terminal. This information provides designers, planners, and managers with the necessary data they need to improve operational performance (de Neufville and Odoni, 2003). Bandara and Wirasinghe (1992) suggest that airport terminal passengers can be categorized according to terminal design or walking distances. In their study they report that there are two main groups of passengers. They divide these categories into those: arriving (terminating) passengers and departing (originating) passengers, and a second category of transferring passengers. The latter group can be sub-divided into hub and non-hub transfer passengers. Other researchers like Bandara and Wirasinghe (1992) define "Arriving passengers" as those passengers who arrive at the terminal by aircraft and move from the arrival gate to the ground transportation area.

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Normally, this is done after they walk through the baggage claim area and retrieve their luggage. Departing passengers are those who arrive at the terminal from the ground transportation facility to the departure gate by moving through each of the necessary 7 security checks and check-in counters. In addition, Bandara and Wirasinghe (1992) identify transferring passengers as those who move from one aircraft to another without leaving the airport terminal. Additionally, some researchers continue their analysis of airport terminals by examining the flow or process of passengers walking though airport terminals. In these analyses, transferring passengers are divided into hub transfers and non-hub transfers (Bandara and Wirasinghe, 1992). Hub transfers are the passengers who move directly from the arrival gate to the departure gate. These passengers can be pre-ticketed if their boarding passes have been issued before starting their connected flight, or they can be processed from the departure gate, after moving through a short connecting time (Bandara and Wirasinghe, 1992).

Federal Funding for Airport Terminals Development

The Federal Government is the main sponsor for funding airports including the costs associated with the development of airport terminals. According to the FAA Advisory Circular (1988), as the successor to the-Airport and Airway Development Act of 1970, the 1982 Act (P.L. 97-248) financially supports United States' airports and airway systems for necessary improvements. Through the Airport Improvement Program (AIP) of the 1982 Act, section 513, eligible public-use airports are provided with federal funds for airport terminal developments (FAA Advisory Circular, 1988). The development of airports' different structures may be given by Federal financial assistance according to their eligibility. The FAA Advisory Circular (1988) indicates that Federal grant-in-aid monies may be provided for developing different airport facilities such as airports' different facilities like airport surface access, multimodal terminals, and other terminal areas. This grant-in-aid program also covers many AIP eligible projects related to the movements of passengers and baggage through the use of the Passenger Facility 8 Charge (PFC) programs. The U.S. Federal government has its own requirements for considering certain airports eligible or ineligible to receive funds for their terminal development costs. According to the FAA Advisory Circular (1988), in reference to dealing with prorating terminal building development, the determination of eligibility for federal share is made by the Federal Aviation Administration (FAA). Based on engineering justifications and by reviewing the devoted areas of passenger flows and baggage, the FAA makes its determinations about terminal development funds. Other

related procedures required for making these decisions are discussed in the FAA Airports office FAA Advisory Circular (1988)..

Airport Passenger Terminal Check-in

Throughout the check-in system of airport terminals, the passenger check-in process uses both traditional and contemporary forms of check-in counters. According to Wells and Young (2011), the process of passenger check-in has significantly improved in recent years. They maintain that this obvious progress has been achieved by preserving some of the airport's traditional policy and models like ticketing. Wells and Young (2011) define the traditional check-in counters as the specific areas or facilities that are being operated by the air carriers' staff. The usage of passenger check-in counters can be different based on their configurations. Wells and Young (2011) report that check-in counters can be configured for exclusive use or common use. The exclusive use of counters can often be identified according to certain configurations of information systems, computers, and equipment. For example, some check-in counters are provided specifically for one airline. Whereas, common check-in counters are configured to be used by multiple air carriers (Wells and Young, 2011). According to Wells and Young (2011), common use ticketing facilities are often provided with common-use terminal 9 equipment (CUTE) which is a computer-based system designed for operating systems of any airline that take part in the check-in facility. Bellioti et al. (2010) define the "common use" as the technological approach used by air carriers to process passengers at the check-in counter area, self-service check in counters, or at the gates. In addition, airport terminal check-in facilities may vary according to an airline's operations and available services. Hsu et al. (2012) indicate that check-in passengers basically need to be provided with four types of services: ticket purchase, check-in, boarding pass, and checking baggage. According to Hsu et al. (2012), four standard check-in facilities exist in the operations of air carriers among airport passenger terminals. These are the counter check-in, selfservice check-in kiosks, online check-in, and barcode check-in. The counter check-in system seems to be the most all-around or adaptable processing method since it is able to combine all the offered services. The Barcode check-in system is capable of only issuing a barcode boarding pass (Hsu et al., 2012). Other options like the Kiosk systems are automated self-service check-in devices and are not able to offer ticket purchases, while online check-in systems cannot be applicable for checking baggage service

Chapter 3: Research Design, Methodology and plan

3.1 Data Source

In this study, three different data collection techniques were used;

- Documentary evidence together with primary and secondary data that related to Automation of air cargo industry

- Guided Interviews had been conducted with airline industry professionals

- Survey on customer expectation

As the study suggests, this bankruptcy includes research design, method and plan for the dissertation. The element is the define of the given studies problem. The approach, techniques for facts amassing, choice of sample research approach and studies strategies are defined in this bankruptcy.The records amassed by means of imparting questionnaires and employees interactive sensation with enterprise experts and enterprise based clients. Here simple random sampling may be used for choosing the sample. As an initial step, for accumulating the primary facts from tour agent, the investigator has to select a pattern. The summary is given below:

- Documentary evidence: So many primary source documents were collected. Maximum of the documentary evidence became in digital format; Historical records and grounded theories are amassed from specific areas like magazines, patents, and surveys.

- Guided interviews: personal meetings with aviation enterprise experts and with a number of the employees operating inside the equal field had been organized and published questionnaires were provided for which most of them gave remarks orally.

- Survey: Set of series quantitative and qualitative records are used in research technique studying facts from books, internet and a few personnel questionnaires.

3.2 Research Design

Research design is the general plans of how one goes about answering the research quest. Research methodology consists of gathering of quantitative and qualitative data by acquiring data from internet, books, internet and personal questionnaires. The observe is designed in such a manner that it contains a logical glide, which describes historical information, present and destiny analysis. Distinct varieties of Conceptual models and facts had been used in this examine.

Set of collection quantitative and qualitative data are used in research methodology analyzing data from books, internet and some personnel questionnaires.

Data and information were collected from internet, books, magazines and personal interactive sessions. They are provided with questionnaires and survey forms.

The data collected by providing questionnaires and personnel interactive sensation with industry experts and industry based customers. Here simple random sampling will be used for selecting the sample. As an initial step, for collecting the primary data from travel agent, the investigator has to select a sample.

- Data collection:

- Primary data collected by personnel questionnaires.

- Secondary data that already exist, here the statistical data from past year taken from the official website, books etc...

- Historic data were gathered from different web sites and Articles.

- Patents and technological data were collected from official website.

- Data Analysis

    - Different articles, news, and press release were analyzed to get different types of documental evidence.
    - Patent requests had been analyzed to locate future technologies used in latest prototypes.
    - Patents have been used to recognize unique technology which might be used Air cargo industry.

3.3 Interview Procedures

For gathering the required data and outlining the examination, the specialist directed distinctive meetings. Basically, center meetings were arranged however because of the bother in social occasion all the business work force on one single day demonstrated testing. Hence, the analyst led individual meetings, coordinate meetings, messages, and telephonic meetings.

The goals of meeting:

- Benefit subjective information roughly desire for Air load industry

- Acquire essential and foundation information about general issues worried about Air freight industry

- To give a premise on extent of models of air freight industry

- To break down the possibility of future air load industry

- To find upsides and downsides of Air freight industry

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From the meeting, the scientist educated the arrangement of issues that avoid procedures of aircrafts and it's after results. On other hand it educated the interest of aircraft industry and its need. The meeting guided in various variables of procedures of aircrafts and its branches, which helped to draw the acknowledgment. Loads of countries, governments and aviation routes are examining on systems of aircrafts. This examination isn't the equivalent as other research in Airline industry. The examination helps the people who work in this industry and furthermore the understudies that need important data about the key arranging and worldwide business. This exploration additionally covers the constraints of universal business, with the goal that the legislature can plan their principles and controls as needs be. Furthermore, the aircrafts likewise can actualize their organization in different universal areas. Individual meetings were appropriated the utilization of unstructured surveys. It recognizes the member's feelings, feelings, sentiment and their hopes roughly techniques of aircrafts. The individual and unstructured meetings can expel non-response botches and can give adaptability inside the stream of meeting. Thus, it permits producing an end to the point.

3.4 Data Analysis Procedures

Set of accumulation quantitative and subjective information are utilized in research technique investigating information from books, web and some work force surveys.

The data gathered by utilizing displaying polls and workers intuitive sensation with big business specialists and venture based clients. Ideal here straightforward irregular examining might be utilized for choosing the example. As a fundamental advance, for social occasion the essential realities from visit specialist, the agent needs to pick an example.

<u>Subjective Data</u>

A totally enormous amount of records winds up collected at some phase in research, chiefly subjective measurements. One of a kind assortments of records incorporate magazines, actualities, abstracts licenses, talk with transcripts et cetera. Numerous WebPages have been assembled to procure records for selective levels. Its vast majority progress toward becoming in instrument lucid organization. Putting away and overseeing and digital book holding of these data had been hard. Various insights control gear had been utilized to spare and settle unique sorts of data. The insights control apparatuses incorporate Microsoft One weight and Microsoft gets admission to. MS get right of passage to permit to presentation of numerous databases and

novel arranging procedures. It analyzed the relationship among the databases and encouraged coding, control of uncooked information, methodological choice account and sparing specialist reminders. MS One weight turned into a cloud stage which the specialist utilized shops the majority of the gathered data for the quick gets admission to and to protect anchors without getting lost. Accumulation and arranging of insights from striking web sites are completed by means of utilizing analyst physically. The analyst amassed and prepared the information; a few styles of strategies were utilized to ensure legitimacy and trustworthiness of discoveries. The key wants to the insights investigation are that to get important sensation from the watch and to find the styles and connections between factors in the examine; which can help to venture into more noteworthy exact end.

Chapter 4: Findings and Analysis

The present part comprehends and break down the aftereffect of understanding business cycles noticeable all around load showcase.

Information and data were gathered from web, books, magazines and individual intuitive sessions. They are given polls and review frames.

inspections are specifically designed to provide an overview of the general condition of all airside areas and facilities. This level of inspection should be carried out principally by the Airside Operations Department. Due to the potentially large areas and distances covered, the inspections will 49 3 necessitate the use of vehicles. All staff carrying out inspections should keep their speed as low as reasonably practicable, as the lower the speed the more effective the inspection will be. Under special circumstances (ATC, SMR, and implemented SMGCS System) runway inspections can be carried out in the same direction as runway movements, provided that a risk assessment has been done taking into consideration local conditions as well as safety measures applied. It is recommended that these inspections be carried out a minimum of four times per day. However, the frequency should be based on local regulations and legislation. The typical times to conduct inspections are: A first-light inspection prior to daytime operations A mid-morning inspection A mid-afternoon inspection A last-light inspection prior to night operations

Analysis of Primary Data

The data collected through the survey questionnaire from various respondents about understanding business cycles in the airline market and other features can be analyzed as given below

Secondary data and discussion

Secondary data which are used for this research are basically statistical facts, annual reports, authority's files, and research information gathered by previous researchers.

There are both merits and demerits of the use of secondary data. Various researches have been carried out and wide variety of records has additionally been amassed in exclusive fields. For this reason, the previously gathered information allow researcher to head back in time and observe past data inside a second. Secondary information is set in such manner in order that future predictions, beyond development test and evaluation between several sorts of data can be achieved. It is also very easy to get admission to most of the secondary data and maximum of them are also freed from rate for researcher. easy and brief to reach, low price and attempt, easy to make comparison, high degree of great, and possibility of test makes secondary data series approach the choice for this writing. The use of secondary data additionally has some demerits; occasionally access of secondary data will become very hard and secondary data designed in a way researcher would possibly not able to understand its major cause and its way of procedure. Another drawback of secondary data is the statistics won't be complete and it additionally might be biased facts.

Descriptive analysis

inspections are a lot of careful checks of the condition on the movement space and its associated facilities than those distributed at Level one. the amount a pair of inspections are best distributed on foot or by using a vehicle operational at a awfully slow speed so sanctioning a way more comprehensive assessment to be made. Within the amount a pair of method the movement space ought to be distributed into variety of zones relying on the scale of the airfield. One zone ought to be inspected very well day by day or looking on the number of traffic within the space to be inspected. the amount a pair of inspections may be distributed at a time on day by day that most accurately fits the stand demand, runway in use or alternative operational needs. The areas coated by the amount a pair of careful inspections are as follows:

Reduction in the Costly Errors

Robotization in collaborations offers such a great amount of convenience concerning hacking down the bumbles that can hurt the association's pockets. In the payload sending and collaborations industry, botches in the store organize is genuinely customary occasion; and these goofs can grow the transportation costs. With the joining of computerization in the business, lesser bungles are submitted. Distinctive collaborations associations are searching for help from offshoring game plans get a kick out of the opportunity to ensure botches are isolated before on to save costs.

Steady Freight Rates

Robotization has given shippers an indisputable detectable quality of load rates and likewise available techniques for transportation. This empowers shippers to settle on fundamental decisions over what carrier dispatches the payload, the movement time and the rate. Thusly, save assets can truly be obvious, in this way empowering the business to be more consider venture assets and choices.

Upgrade Customer Service

Losing a customer can be pulverizing for payload forwarders and transportation associations. Regardless, the various wonders of computerization are appropriate to back office errands, and in the bleeding edge organizations. Since computerization has allowed progressing payload rates and availability of transportation modes, this has reinforced customers to see what sum is the load cost and the movement time span through customized cautioning.

Access to Reports

When you approach reports, it empowers relationship to check the data and the surge of the conveyance. This is made extensively less requesting through robotization. Getting unquestionable facts and information similarly empowers associations to screen execution of transporters, and this empowers associations to deal with the cost of creation and maintain a strategic distance from future horrendous decisions. Computerization has such an incredible add up to offer; and when used and executed genuinely, affiliations will indeed secure and create. There are only two diverse ways associations will go robotization which is lying before them or staying where they are and get left.

Adaptability

Robotization has made extraordinary gadgets for the vehicle business. It has fuelled various methods to quicken and empowered associations to stretch out with less issue. This for the reason that they have been executing old plans that were specially designed to the association's needs, and they would keep it that way. A couple of affiliations are moreover using half and parts, fusing their present methodology with computerization.

Injuries

Overdependence on Automation (Complacency)

Runway incursions, excursions and confusion present one of the greatest aviation hazards with potentially very serious consequences. A number of fatal accidents have occurred around the world resulting from these events. In recognition of the seriousness and growing frequency of these events, a number of years ago the FAA and Eurocontrol began a concerted industry-wide review to seek to reduce the numbers of runway incursions. This work gave rise to the Eurocontrol "European Action Plan for the Prevention of Runway Incursions", which involved many industry sectors. Additional information can be found in the ICAO Doc 9870 Manual on the Prevention of Runway Incursions. One of the conclusions was that a Local Runway Safety Team should be established at each airport. Some airports have gone beyond this recommendation and have established a Manoeuvring Area Safety Team (MAST). The topic of runway incursions, excursions and confusion should be discussed on a regular basis by the Airside Safety Committee or Local Runway Safety Team or Manoeuvring Area Safety Team (Section 3.8). ACI has been actively participating in the development of a Runway Excursion Toolkit and supports the findings of the FSF Report of the Runway Safety Initiative 'Reducing the Risk of Runway Excursions. Some of the recommended mitigations include: RESAs, runway closure criteria, compliance with ICAO Annex 14 – Aerodromes, Volume 1, availability and training of RFFS personnel, and means for flight crews to visually determine runway distance remaining.

Opposing Impact on Airmanship

Spencer and Ebbage (20031) portrayed airmanship as the going with: "An individual express that enables aircrew to hone sound judgment, indicate uncompromising flight order and show skilful

control of a flying machine and a situation. It is kept up by predictable self-awareness and a yearning to perform in a perfect world always." Flight gather aircraft controlling fitness change may be unfairly impacted by their pointless dependence on the electronic instruments. For instance, pilots can depend totally on the autopilot ability to keep up a particular tallness and speed of the aircraft. The importance of airmanship is included when flying machines question pilot planning practicality through the new Multi-Pilot Crew License (MPL) medium. The MPL empowers pilots to avoid the acquisition of Private Pilot License (PPL) and furthermore Commercial Pilot License (CPL) to achieve a set Air Transport Pilot License (ATPL). With more unmistakable focus on pilot test program getting ready, airplane pilots arranged through the MPL procedure won't spend indistinguishable number of hours from pilots arranged by methods for the standard system. As the motorization features end up being more average on various flying machine forms, flight group will assemble their reliance on these limits. This makes pilots diminish their utilization of airmanship. The ability to fly an aircraft physically regardless of general introduction to computerization and invaluable information get to is basic, especially in the midst of emergencies. In 2008, United Airlines Flight 731 lost part of its grandstand loads up, radios, transponders and TCAS. Fortunately, the pilots could keep up manual flight control to touch base back at their departure aerodrome. The need to keep up airmanship is thusly highlighted despite in the midst of this season of robotization. While 90% of the flight group people examined in a National Aeronautics and Space Administration (NASA) review exhibited that they do practice manual venturing out to keep up their capacities, it finally depends upon how much the business complements the hugeness of airmanship over the security and adequacy of flight exercises.

Regression Analysis

During construction of new buildings on or off the airport it is possible that cranes will be used and in some cases these be may be erected to a height greater than the finished building. If this is the case, a process has established to check the crane operating heights during on or off-site construction to ensure that no protected surfaces are infringed. Crane heights should also be checked during the 5.14 Runway surface friction readings should be measured on a uniform scale, and there should be consistency between the scale used for maintenance testing and that used for operational testing. ACI supports the Joint Winter Friction Measurement Programme, as well as a new ICAO task force which aim to gather data on which a review of the consistency of

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operational testing results could be based. 5.15 The effectiveness of different means of improving friction coefficients of wet runways should be assessed. ACI advocates adequate surface drainage, as well as removing rubber and contaminants from the runway surface on a regular basis. Any methods used for this purpose must meet local and international requirements. During construction, crane operating heights should be checked to ensure no protected surfaces are infringed. Dubai International Airport 57 3 planning stage of all construction, as outlined in the process above. In addition, crane operating heights should be checked during construction to ensure that changes have not occurred since the plans were approved resulting in the crane operating at a greater height. If cranes are operated in the hours of darkness, they should be lit with red obstruction lights. If an infringement does occur, the authority responsible for instrument approach procedures should verify that the procedures are not infringed and that safety is not compromised. To assist in this process, airports should inform city planning departments and / or crane operating companies about the requirements for operations taking place in the vicinity of airports. Some airports use a Crane Permit system that gives authorization for cranes to operate up to a specific height in a specific location. An example of a crane permit form can be found in Annex G. Surveys may need to be conducted periodically to ensure the safeguarding process outlined above is functioning and tree growth monitored to ensure the surfaces are not penetrated. These surveys should cover the areas within the protected surfaces

Chapter 5: Interpretation of Results

Through its various procedures, airport security involves all the actions that are taken to protect airports from any criminal actions that affect airport safety. According to Wells and Young (2011), the procedures of airport security have been designed to prevent crimes and react to the criminal acts that affect the travelling public in terms of safety and security. Graham (2014) believes that airport security is involved in preventing illegal acts including terrorist activities. Dealing with airport security, certain criminal acts and activities are specifically identified. These include such things as the hijacking of aircraft, also called air piracy, destroying or afflicting plane(s) with explosives, and terrorist acts, which are defined as organized activities unexpectedly carried out against the public or individuals to gain political goals (Wells and Young, 2011). Acts like assault, theft, vandalization against passengers, aircraft, or airport facilities are also considered criminal activities (Wells and Young, 2011). Throughout the history

of civil aviation, there have always been concerns about airport security. Over the years these concerns have evolved and grown along with incidences of terrorist attacks or crimes committed against airports in the United States and other countries. According to Wells and Young (2011), more than 600 aircraft hijackings and more than 100 aircraft bombings have been recorded in world history in relation to commercial aviation. The world's first catastrophic aircraft hijacking happened in July 1947 where a flight attendant was killed by three Romanians (Wells and Young, 2011). Severe terrorist actions of hijacking have defined specific eras and resulted in drastic changes in the world's airport security policies and procedures. Wells and Young (2011) report that the event of 9/11 has been the worst terrorist attack in the history of commercial aviation. In this attack four separate aircrafts were hijacked and exploded by a group of Al-Qaida terrorists in 13 September 11, 2001.According to Graham (2014), following the 9/11 events, many security measures were introduced within airport security operations. Particularly in the United States, airport security became the focus of national concerns as a considerable issue (Graham, 2014). One consequence of the attacks was the signing of the Aviation and Transportation Security Act (ATSA) which provided airport security with fundamental changes (Wells and Young, 2011). In terms of global concerns, in 2002, airport security was adopted by the International Civil Aviation Organization (ICAO) through Aviation Security Plan of Action (Graham, 2014). The 9/11 attacks have not been the last terrorist acts against aircrafts or airports. Airport passenger terminals, for instance, are still being targeted by terrorist attacks. On March 22, 2016, two explosions struck the Zaventem International Airport's main terminal ('BBC News', 2014). This attack was committed by two terrorists suicide attackers who targeted the airport's check-in area killing 11 people and injuring 81 ('BBC News', 2014). Another explosion on the same day in the same city's metro station was also carried out by the terrorist group of the Islamic State in Iraq and Syria (ISIS). This group declared its responsibility for committing this act ('BBC News', 2014). This recent terrorist attack indicate that the fact that airports are still being widely targeted by terrorists; it obligates airports to always make plans for efficient airport security. Based on all the possibilities of criminal attacks that threaten the airports and airport terminals, several security activities and procedures have been adopted by all major airports. Graham (2014) introduces some of the activities affiliated with airport security. For example, today there are new security badge systems, baggage reconciliation, armed protection for landside and airside, video supervision, and checks on staff that have access to the restricted areas. Wells and Young (2011) define some of the common security-related areas at the

commercial airport services, such as passenger screening, baggage screening, and biometrics. 14 Wells and Young (2011) explain that passenger screening facilities are often automated checking processes that can be done through magnetometer or walk-through metal detectors (WTMD), which are able to detect weapons if carried by passengers. These devices are located in the security screening zones where passengers' carry-on bags are inspected through X-ray machines to find prohibited items like firearms, sharp objects, volatile liquids, or plastic or chemical-based trace explosives (Wells and Young, 2011). Further inspections can be conducted for suspected bags or for bags selected randomly through the explosive trace detection (ETD) equipment (Wells and Young, 2011).Other technologies like Biometrics are used to identify and recognize certain human body features like fingerprints, eye retinas and irises, voice and facial patterns, and hand measurements (Wells and Young, 2011). Graham (2014) introduces two types of biometric identification: psychological and behavioral biometrics. Psychological biometrics is used for recognizing fingerprints, retina, or iris patterns; behavioral biometrics is used for investigating aspects of behavior like voice and signature The most obvious of these is the presence of birds, but other animals such as mammals can also present a hazard. One key method to control and limit the dangers presented by wildlife on an airport is to ensure that adequate fencing is put up around the airside areas. This is fundamental to keeping mammals off the aerodrome. Birds present a hazard to aircraft in flight. They easily adapt to human development and make full use of the many opportunities that human activity provides. The built-up areas of airports offer these birds a variety of nesting and roosting sites, as well as sources of food. It is impossible to guarantee no bird strikes will occur, but there are a number of activities an airport can undertake to reduce the probability of this happening. These include: Collecting accurate information on all bird strikes that occur, including details of the species involved Observations of bird species and bird behaviour both on the airport and in the surrounding areas • • Specially trained and equipped staff manage wildlife on the airport. Brussels International Airport 58 3 Identifying the hazard presented by each species by carrying out a species-based risk assessment Prioritizing efforts towards the most hazardous species It is necessary to carry out risk assessments, as noted in Section 1.3, in order to better understand the risks posed by wildlife on an airport. The biggest hazard is presented by large birds that fly in flocks. Practical steps that can be taken to reduce the attractiveness of an area to birds include: Cutting the grass so it does not attract invertebrates, but not too short that it provides a resting area for the birds Reducing the area where top soil stripping takes place, exposing worms and insects Ensuring no new water

features or waste dumping sites are placed around the airport that might generate hazardous flight lines across aircraft arrival or departure routes Not providing perches, ledges, holes, overhangs or other structures favourable to nesting, roosting or perching of birds Screening or blocking holes and openings in hangars Installing flexible netting across the base of rafters Installing vertical plastic blinds in doors of hangars and buildings that are frequently left open. Installing netting, sheet metal, or other barrier materials under overhanging eaves and ledges Installing spikes on ledges or fine parallel wires stretched across ledges or on the roof Placing nets or other systems over water features to prevent access Ensuring that where raptors or hawks are present, there is no food source e.g. rabbits or mice Ensuring no bushes or shrubs are planted as part of airport landscaping that produce fruit and seeds which might attract birds The airport operator should advise the airport community that nobody should feed wildlife (including birds), expose food waste or purposely let wildlife in their facilities by providing nesting or other attractive forms of habitat. In addition to steps outlined above, it is good practice to have a bird detection and dispersal team on duty to detect and disperse any birds seen on the airports with the use of bird distress calls, shell-crackers or 'bangers' and eventually by shooting, if the other methods do not deter the birds adequately. Accurate logging of all bird species, numbers, location and behaviours is essential. On occasion, animals transported as cargo (domestic animals, racing horses, livestock, etc.), may escape from their cages or enclosures and gain access to the movement area. Ground handling agencies should report these occurrences in a timely fashion and work closely with the airport operator to rapidly contain these animals in a timely fashion..

Airport terminal operational problems can be observed among various airport services. Tošić (1992) reports that passenger terminal issues are increasingly connected with the tangled airport planning and their solutions are important to airport terminals in terms of expansion and operations. Based on numerous research findings there are several airport terminal operation problems that can be identified. The issues include factors such as the demand for space and services, single service counter-type facilities, waiting areas facilities, baggage processing facilities, terminal buildings, gate number and utilization, and passenger orientation (Tošić, 1992). Bellioti et al. (2010 specify some specific operational problems within airport passenger terminals regarding check-in counter assignments, gate area assignments, airline back offices, terminal security, and curbside. The literature review provides us with insight on the numerous factors that that can affect airport passenger terminal operations. Moreover, the literature shows

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many of the outcomes and reports about many solutions to these problems. In terms of design, de Neufville and Odoni (2003) report that passenger terminal designers may face many problems regarding distributing passengers within the designated terminal areas. Many airports have major financial and operational issues that affect passenger buildings due to selecting improper design and configuration (de Neufville and Odoni, 2003). According to Sorenson (2015), the consistent increases in the number of passengers within the airline industry requires terminal design and its related aspects to be necessarily dealt with along with the subsequent changes. Table 1 shows the impacts of several factors related to airport passenger terminal design on terminal operations

To finish the rundown of on-screen characters for ground dealing with, it ought to be included the carrier, the ATC, the airplane terminal, the cockpit group, the lodge team and the ground taking care of team (from five to handfuls). This high number of on-screen characters included adds to the intricacy and administration of the procedure. The air terminal foundation will be broke down at this point. In this paper the airplane terminal condition will be considered as a direct stopping stand design with two adjusting streets at the front and at the back of the flying machine stand. Both adjusting streets are associated each 4 to 6 stands (contingent upon airplane compose as it is wingspan related). See Figure 5 (Note in Europe it is more typical to have just a front overhauling street front of the flying machine and vehicles can course between air ship stands. In the US it is more regular to have an administration street just at the back with vehicles coursing between air ship remains also) When GSE are circling utilizing administration streets, the most extreme speed permitted will be commonly 25 km/h. At the point when the GSE enters the stopping stand, the most extreme speed will be 6 km/h6. For GSE last position to flying machine contact the most extreme docking rate will be 0.8 km/h6. See figure 6 for speed zones. It is likewise indicated how these assets are normally appointed in the air terminal condition between air ship stopping stands: connected to stopping stand, shared between a few stands commonly 2 to 4, a few zones (e.g. east of traveler terminal) or for the full air terminal.

With every one of these presumptions, we can at last plot the follows for GSE directions for docking to the flying machine entryways and situating to air ship adjusting boards in Figure 7; and Figure 8 for undocking and leave directions. For lucidity purposes, just the center purpose of the GSE front controlling hub way (in red), and the GSE wheel envelope (in green) are plotted. To be noticed that both prepare of dollies are in the two arrangements of directions as they each make somewhere around two separate excursions to empty the freight holds and to stack it

individually. The directions in a similar stand and with a similar air ship compose, aircraft and a similar turnaround compose will change generally between turnarounds as they rely upon GSE vehicle turning range and controlling attributes, begin position (for stopped GSE) the momentum condition status when GSE really move and the most vital and variable factor: the human driver or then again The main inefficiencies related to the aircraft ramp handling as:

- Availability (free and on working state) of airplane terminal framework

- Availability (free and on working state) of GSE

- Ramp blockage

- Coordination of on-screen characters and assets to play out the errands

- Aircraft slope harm .

The air payload industry contains an amazing dissemination organize associating makers and shippers to load forwarders, off-plane terminal freight consolidators, and air terminal orchestrating and cargo managing workplaces where shipments are stacked and exhausted from flying machine. Cargo set on flying machine adventures both locally and all around and is comprehensively seen as a significant fragment of U.S. trade and business. While only a little piece of cargo shipments goes by means of air, things dispatched on flying machine generally include time-tricky and high-regard things. By weight, carrier load contained only 0.4% of all business payload activity in the United States, anyway spoke to 25.1% of the estimation of items sent as freight in 2007. Consistent models of air stack fuse high-regard machine parts and gathering gear, electronic portions for made items, client equipment, diamonds, and transient things, for instance, sprouts, natural items, and new fish. Specific freight that requires specific dealing with, for instance, exceptional legitimate instruments, quite certain mechanical assemblies and equip, and even unadulterated blood steeds is also transported as air payload.

Interface with Stakeholders

A close working relationship at a professional level between the various duty managers of organizations such as ATC, the airport, control authorities and airlines is vital. This should be an on-going process and ideally, joint daily meetings should be held, in order that individuals dealing with an accident, incident, occurrence or aircraft / airport related emergencies will be able to work together much more effectively. When major developments occur in airside areas, Project Managers can be introduced to the forum to deal directly with any issues arising from the activities taking place. Airport requirements should be clearly stated and disseminated to all companies operating airside. These may require each company to: Document and implement its

own Safety Management System (SMS) covering all safety aspects of its operation Provide proof of an insurance policy (aviation liability insurance) or the equivalent and a tracking system to ensure adequate insurance is maintained Demonstrate that all staff are properly trained and tested to carry out the tasks expected of them Comply with legislation, airport notices, directions, safety alerts Put in place a named safety manager appointed to oversee all matters of training, testing and maintenance of equipment Co-operate in the implementation of airport-wide safety programmes Provide a safe, efficient and high quality service without undue disruption to the operation of the airport Allow access to documents (within legal restrictions) Participate in regular joint inspections or audits of service areas with the airport operator Conduct risk assessments Ensure clean and tidy storage and proper disposal of materials Notify the airport of any particular hazards Ensure dangerous goods are properly stored, labelled and handled Ensure all plant and equipment is appropriately and safely stored in adverse weather conditions •A close working relationship between the airport operator and stakeholders will enhance safety at the airport. Geneva International Airport 61 3 The third party safety processes listed above can be used in a number of ways: In a contractual relationship between the supplier and the airport As a transparent process enabling comparison of different companies' compliance with each element As an assessment process for awarding future contracts

Summary

The Root source examination of the issues discussed above reveals challenges as nonattendance of engaging structure, confounded regulatory techniques and procedures, lacking and low nature of HR sending and nonappearance of intense imaginative enablement of payload managing store organize are accountable for the current circumstance detectable all around load collaborations division in India. These troubles are discussed in more conspicuous detail in the going with zones. Air terminals were made generally from voyager edge of view, and thusly need of cargo office progression was not viewed as critical. Cargo is generally the last part to be thought of and is entrusted to that bit of the air terminal, considered not basic something unique. This leaves the entire collaborations of cargo – establishment and office in woefully insufficient and deficiently directed domain of the plane terminal. Load establishment at any air terminal is essentially not the payload terminal building that houses the conveyance focus yet likewise the related workplaces including interesting workplaces for express freight, hardened sustenances, airmail, and risky items. Establishment similarly joins particular supplies, interfacing roads, truck ceasing terminal, open solaces like working environments for arbiters, open auto halting region et cetera. The progression and plan of any conveyance focus including air terminal load terminal is generally dependent on the arrangement of activity and strategies to be gotten which along these lines is liable to Nature of errands e.g. Air express mix particular sorts of payload level of

computerization organized volume of cargo to be dealt with apex time stack consider conventions strategy a particular region Nature of load to be managed - free versus palletized, Storage time of import stack going before movement of payload among various conditions. Incredibly all things considered previously, it is the other way round. The stockroom office is first made and after that the strategies are fitted into it inciting inefficient undertaking and deficiently made establishment. It is basic thusly the stockrooms are orchestrated in light of the techniques and plan of activity got.

Engine Run-Ups

Engine testing is handled in many different ways at different airports. Key factors include whether or not a maintenance organization is based at the airport and the proximity of nearby residential areas. Engine testing should be limited for environmental reasons to: Only low power tests at night with a maximum duration per run-up and a maximum total number of durations for each night Only to take place in specific acoustic enclosures at night Only to take place in remote parts of the airport at night Only to be conducted on aircraft needed for an early morning departure the next day Safety aspects to be considered during engine tests can include:

A wing-man on the ground (possibly two in busy situations) to ensure no third parties are affected by the jet blast or prop wash Continuous contact with ATC while the run-up takes place Prior permission from the airport operator to carry out a run-up Assessment of the wind speed and direction Assessment whether balancing thrust is needed from other engines on the other wing Use of anti-collision and navigation lights when the run-up occurs Use of cones or other physical deterrents around the aircraft to improve safety Check for FOD in the area concerned before the run-up takes place, both in front of and behind the aircraft Ensure the aircraft brakes are applied and / or the aircraft is secured with chocks Ensure engine blast does not present a hazard to any nearby staff or to property Ensure engine blast is directed away from active arrival / departure paths and areas where aircraft may taxi

Helicopter Operations

Some airports may be equipped with helicopter runways and aprons: in this case, there will be particular requirements for helicopter approach lighting and runway markings.

• 3 The airport should liaise with local ATC to ensure that procedures exist for helicopter air taxi routes, helicopter marshalling, and safety requirements for parking helicopters near light fixed wing aircraft. Any airport staff expected to work in close proximity to helicopters should be

given specific training. There should also be safety procedures for companies that allow boarding or deplaning of passengers with rotors running. For all helicopter runways, taxiways and aprons, the same requirements for inspections, bird control, and vehicle activity should apply as for a fixed wing operation.

Factors critical to success of study

An extraordinary piece of the challenges inspected in the before zones could be tended to if appropriate developments are grasped for improving capability. That does not appear to have happened in spite of the way that undertakings have been made starting late to push ahead in this noteworthy district. Development has been an awesome enabling impact of headway and progression inside the collaborations business. World over, transporters and load forwarders grasp advancements to give better information, organization, co-arrangement and package following. Computerization and mechanization are not comprehensively used in the Indian air terminals to the extent that it is open and should be used. Advancement like Warehouse Management System (WMS) Radio Frequency Identification Devices (RFID), Automatic Storage and recuperation Systems (ASRS) should be used to grow computerization to support quicker and more beneficial exercises provoking decongestion at the air terminals.

Appropriation focus Management System (WMS)is considered an obvious prerequisite for successful payload errands. The principle job of a WMS is to control the advancement and limit of materials inside an appropriation focus. A WMS is a key bit of the generation organize and basically hopes to control the advancement and limit of materials inside a dissemination focus and process the related trades, including transportation, tolerating, set away and picking. The systems in like manner prompt and streamline stock set away in perspective of ceaseless information about the status of holder utilization.. At the point when data has been accumulated, there is either bunch synchronization with, or a persistent remote transmission to a central database. The database would then have the capacity to give significant reports about the status of items in the conveyance focus. The objective of an appropriation focus organization system is to give a course of action of robotized strategies to manage the receipt of stock and returns into a stockroom office, show and manage the reasonable depiction of the physical storerooms (e.g. racking et cetera), manage the stock inside the workplace and enable a predictable interface with orchestrate taking care of and collaborations organization remembering the ultimate objective to pick, pack and ship thing out of the workplace. With the WMS, one can look at utilizing Auto ID

Data Capture (AIDC) advancement, for instance, compact PCs, remote LANs and potentially Radio-repeat ID names (RFID) to successfully screen the flood of things. The ASRS include a variety of PC controlled systems for therefore setting and recuperating troubles from specific accumulating territories. Space speculation reserves, extended proficiency/reduced work, extended precision and diminished stock levels are a part of the basic favorable circumstances. The apparatus required for an ASRS consolidates a Storage and Retrieval Machine, or SRM, that is used for brisk accumulating and recuperation of material. SRM are used to move stacks vertically or on a level plane. Radio Frequency Identification Tags are incredibly important for the steady after of load compartments inside the stockroom. Despite checking, the industry should revolve around upgrading information stream between different social occasions in the collaborations chain through electronic advising and other EDI traditions. One Airport Operator has tested by saying that there has every one of the reserves of being no necessity for a lone conveyance focus organization structure in light of the fact that the present IT systems are in full coordinate with the Indian conventions 1.5 variation of EDI.

Uniformly there has been a compartmentalized method to manage creative change inside each industry piece, as similarly Government, particularly for EDI. There are an over the top number of stages between the shipper's door and charge motivate, or the other route around from arriving of excursion till the transport to unequivocal specialist. A general industry audit, developing an organized strategy, and grasping a run of the mill arrange is essentially required. A segment of the key EDI issues which are discouraging the reliable improvement of the information are:

- All relevant Governmental associations are yet to be interconnected
- Processes change at different plane terminals, as there is no organization.
- Each guardian is setting out without any other person selective administrator systems.
- Data can't be adequately shared inferable from manual methods and paper documentation.

Indeed, even where shippers have their own mechanized structures/ERP systems, they ought to yet give paper commitments to the pros/middle people. Same business, conventions and transportation data is entered various events in the midst of the collaborations stream, realizing high association costs and augmentation for manual botches. Nonattendance of shipment detectable quality requires steady get up to speed with bearers, shippers and overseers, results in extended correspondence costs, disciplines and deferrals, finally customer dissatisfaction.

Airport Staff Courtesy

Passengers' expectation on airport staff are related to the ability to provide reliable and accurate services and the willingness to help customers and provide services with quick responses. Assurance indicates that staff with professional knowledge of services and behave kindly and courteously is likely to win the customers' trust and confidence. Helpful and efficient frontliners have become the most important aspect for passengers' satisfaction. However, according to ASQ Best Practice Report on Staff Courtesy, ASQ courtesy scores have not significantly improved during the last few years. This is due to the following reasons: Courtesy is about human beings, which means that it is very personal and difficult to have an impact on and most of the staff working within an airport is not employed by the airport authority (third party staff), which implies that the airport has a limited influence on them. Airport management has engaged in many types of programmes to further develop their own and also third party employees to positively influence the staff courtesy. These programmes will include awareness & refresher training, including giving up incentives and recognition programmes.

The airport operator should have procedures in place to deal with flights of an unusual nature. These may include: Outsize cargo flights VIP flights (royalty, heads of state, Government Ministers, religious leaders, sports teams, sports and entertainment celebrities) Major sporting events (World Cup Soccer, Olympics) Major religious events (pilgrimage e.g. the Hajj) Ammunition or firearms flights Military flights Flights shipping specialist livestock such as racehorses Space shuttle emergency landing sites Procedures should be planned well in advance to include all the handling companies, ATC, control authorities, and other stakeholders to ensure that all parties understand the specific requirements of the flight and anticipate all unusual matters. The following should be considered in a situation where there is a deviation from normal procedures and processes: Helicopter operations have special requirements, such as designated landing zones and markings. Geneva International Airport 63 3 Any special approach procedures Aircraft routing from the runway Aircraft parking place Access to airside for any third parties not familiar with airside Vehicular routes Marshalling requirements Specific signage Specialist cargo handling facilities Spacing from other activities Other aircraft arrival or departure routes affected Involvement of Public Affairs teams to handle media interest Involvement of Government agencies Policing and security arrangements

In ensuring the capabilities to deliver the highest level of customer service standards, Malaysia Airports has emphasised on developing excellent customer service culture within its own staff. Malaysia Airports introduced a programme that is designed to improve the ASQ elements related to customer service, called Advancing Towards a Culture of Excellence (ACE) Programme. ACE involves the participation of all agencies and partners in the airport, namely airlines, Department of Civil Aviation, Immigration, Custom, Public Transportation companies, medical services, and Police – to work together as one ecosystem to serve the customers. The programme outlines the standard of customer service that Malaysia Airports aims to achieve that can be universally practiced by all service providers which include grooming guidelines and standard behaviour practice.

Chapter 6: Conclusions and Scope for Future Work

Airport traveler terminal operations include a spread of terminal activities designed to serve terminal passengers. The structure of various terminal facilities participate within the provision of those services and activities dedicated to aerodrome passengers. supported the existence of many problems determined at intervals aerodrome traveler terminals, sure connected issues in terminal design, arrival facilities, baggage handling, gates, and security will have their own impacts onterminal operations.Terminal style issues embody long traveler walking distances, narrow passage ways in which, and restricted federal funding. traveler arrival issues embody the connected issues with range and handiness of arrival counters in conjunction with the existence of temporary congestions happen as a results of victimisation passengers' self-check in services. house and lack of standardization and late arrival of luggage are the essential issues ofbags handling.

Gateassignment issues will be the utilization of remote stands for parking aircrafts, the variability of craft sizes, the case of facing the last-in-first-out in parking,aircrafts,and unassigned turns.Lastly,consistent security threats from completely different sources of criminals and terrorists like hijacking and bomb offensive are different issues that have effecton aerodrome traveler terminal operations.

The impacts of those issues will be found once they have a spread of outcomes affecting traveler flight operations in terms of time period, convenience, and security. Although many recommendations or suggestions are created to remedy these issues several of them still exist and stay common. additional research studies will be conducted to research whether or not the current terminal operational issues need additional economical solutions or to search out out whether or not these operations themselves are inefficient and wish forceful measures for improvement.

Passengers' desire to carry out as many of the processing tasks as possible away from the airport is clear from the recent developments in areas such as check-in, baggage drop off and immigration clearance. They like to have the utmost convenience so they can proceed to boarding gates. Establishing self-bag-drop solutions by simply allowing the passengers to deposit their bags at a drop bag unit upon arrival at the airports, will provide the convenience by having the passengers to follow instructions on the screen, scanning the valid documents and print out the bag-tags themselves. Another new technology is the automated border crossing. The automated border crossing is quick, easy to use, and failsafe border control solutions. The process begins with the passengers placing passports on the scanner, documents validity and authenticity are verified until the biographic data are being checked against various databases.

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Appendix

Question 1: Today airport all over the world are competing in a complex ------ environment?

    A- Economic   B – Business

Question 2: The performance measures of an airport can be derived from the mission and strategy that later can be transited in to ------ objectives ?

A- Intangible

B – Tangible

Question3: A unique travel experience is the key clement in addressing passengers expectations ?

A – True

B – False

Question4: The airport is not a destination for air travellers ?

A - True

B – False

Question 5: Secondary data which are used for research are basically ---- facts ?

A – Statistical

B – Imaginary