Enhancing Service Quality At Srilankan Airlines: A Critical Analysis Of It Factors And Recommendations

Gosthinghgho Waduge Nadeesha Gayathri

(129057U)

Master of Business Administration Degree in Information Technology

Department of Computer Science and Engineering

University of Moratuwa
Sri Lanka

April 2016

ENHANCING SERVICE QUALITY AT SRILANKAN AIRLINES: A CRITICAL ANALYSIS OF IT FACTORS AND RECOMMENDATIONS

Gosthinghgho Waduge Nadeesha Gayathri

(129057 U)

Thesis submitted in partial fulfillment of the requirements for the degree of Master of Business Administration

Department of Computer Science and Engineering

University of Moratuwa

Sri Lanka

April 2016

Declaration

I declare that this is my own work and this thesis does not incorporate without acknowledgement any material previously submitted for a degree or diploma in any other university or institute of higher learning and to the best of my knowledge and belief it does not contain any material previously published or written by another person except where the acknowledgement is made in the text.

Also, I hereby grant to University of Moratuwa the non-exclusive right to reproduce and distribute my thesis, in whole or in part in print, electronic or other medium. I retain the right to use this content in whole or part in future works (such as articles or books).

Signature: ..... Date:.....

Gayathri G.W.N

(129057U)

The above candidate has carried out research for the Master's thesis under my supervision.

Signature of the supervisor:..... Date:.....

Dr. H M N Dilum Bandara

Department of Computer Science and Engineering

University of Moratuwa.

Abstract

Airline industry transports passengers, luggage and freight using a combination of service processes from multiple domains that are complementary to each other. IT services play a key role as they integrate many other services and provide a means of directly interacting with the passengers. Therefore, dependable and high-quality IT services are essential for an airline to strengthen its competitiveness or even to survive. Continuous enhancement of IT service quality results in enhanced customer satisfaction, increased efficiency and maximization of business.

The objective of this research is to identify means of enhancing the airline service quality at SriLankan Airlines through enhanced IT service delivery. First, the research identify critical factors that affect the IT service delivery. Second, a suitable set of recommendations is identified to enhance the IT service delivery. This research adopted a mixed method approach. First, the current IT service quality was measured using IT service quality measurement framework, which cover six common issue areas. The evaluation was carried out using KPIs, baselines and target values, as well as data collected from monthly reports produced by cost centers in IT department. Based on the evaluation IT service availability, capacity, reliability, maintainability, continuity, utilization, customer feedback, customer support, mutual value creation, adjustability and IT governance were found to be favorable. However, it was also identified that areas such as IT service performance and information security need improvements. Second, a set of interviews was conducted with relevant stakeholders to identify possible actions to further enhance the IT service quality as well as to address the identified limitations/issues. Some of the key recommendations include promptly notifying passengers via SMS (e.g., about flight status and loading of baggage), enhance IT services provided for operationally critical areas, implement six areas of IATA self-service fast travel initiatives and sharing IT knowledge with mega carriers.

Keywords: IT service, IT service quality, IT service quality measurement framework

Acknowledgement

I would frankly offer my heartfelt gratitude to my supervisor Dr. Dilum Bandara, Senior Lecturer, Department of Computer Science & Engineering, Faculty of Engineering, university of Moratuwa for his immense support and guidance given to carry out and manage this research from its beginning to the end.

I would also extend my superior gratitude to Dr. Chandana Gamage, Head of the department, Department of Computer Science and Engineering, University of Moratuwa for sparing his valuable time by providing continuous support for the research work and reviewing research progress, which contributed immensely in carrying out the research successfully.

My sincere gratitude goes to my external supervisor Mr. Chamara Perera, Head of IT, SriLankan Airlines Ltd for his motivation and guidance. I take this opportunity to express my thankfulness to all managers of SriLankan Airlines those who contribute their precious time during the interview and after by providing information.

My sincere gratitude is further extended to all the academic and non-academic staff of Department of Computer Science & Engineering, University of Moratuwa and my colleagues from MBA in IT degree program for their support in numerous ways.

Further, my sincere gratitude is to superiors and colleagues at my work place for the support and encouragement given to complete this exercise.

Lastly, I extend my sincere thanks to my loving husband, daughter, son and parents for the continuous support and encouragement given, and without their support, this milestone would not be possible.

Table of Contents

List of Figures

List of Tables

List of Abbreviations

AA	American Airlines
ASP	Airline Service Process
ATC	Air Traffic Control
AQR	Airline Quality Rating
AWB	Air Waybill
BA	British Airways
BIA	Bandaranaike International Airport
CMB	Colombo
CDN	Content Delivery Network
CRM	Customer relationship management
DCS	Departure Control System
DGCA	Director General Civil Aviation
ECO	Electronic Customer Outlook
GDS	Global Distribution System
GOM	Ground Operation Manual
IAA	International Aviation Academy
IATA	International Airline Training Association
IBE	Internet booking Engine
IFE	Inflight entertainment
ITIL	IT Infrastructure Library
KPI	Key Performance Indicators
MICE	Meetings, Incentives, Conventions, and Exhibitions
MYB	Manage Your Booking
NOC	Network Operation and Central
SGHA	Standard Ground Handling Agreement
SLA	Service Level Agreements
SLIM	Sri Lankan Institute of Marketing
SMS	Short Message Service
TAASL	Travel Agents' Association of Sri Lanka

Chapter 1 - Introduction

1.1 Introduction

SriLankan Airlines (UL) is the National Airline of Sri Lanka. It is an award-winning carrier with a firm reputation as a global leader in service, comfort, safety, reliability, and punctuality. The airline's hubs are located at Bandaranaike International Airport in Colombo and Mahindha Rajapaksa International Airport in Mattala. It serves about 89 destinations in 44 countries in Europe, Middle East, South Asia, Southeast Asia, Far East, North America, Australia and Africa. The carrier operates a fleet of 22 aircrafts consisting wide-bodied and mid-range Airbuses. UL extends its network via code-sharing relationships with Etihad Airways, Malaysia Airlines, Air Canada, S7, Oman Air, Finnair, Asiana Airlines, Alitalia, Mihin Lanka, Air India and Saudi Arabian Airlines. SriLankan joined the Oneworld airline alliance as the first carrier from the Indian sub-continent and offers more services and benefits to its customers, such as a wider route network, opportunities to earn and redeem frequent flyer miles on any one of the OneWorld carriers, and most extensive ranges of alliance fares.

The basic service delivery process of the Sri Lankan Airlines can be briefly described as follows. Assume a customer buys a ticket online. Initially consumer seeks information about the flight over the UL's official website. When the customer decides which flight to buy, he/she may buy the ticket by paying directly using a credit card, via an agent, or contact the call center to figure out other buying options. After the reservation customer reaches the airport and go to the check-in desk. At the check-in desk passenger puts the luggage onto the scale while the agent checks out the documents, prints the boarding pass and the barcode tag for the luggage. After check-in, the passenger can go through the security control. Subsequently the passenger can go to the gate where the airline employees check the boarding passes and lead passengers to the airplane.

After takeoff, the monitors are turned on and start to display information about the flight. In the business class, a passenger may ask to make a phone call or to send a fax. On the backstage, the IT and radio systems of the plane work to create a connection to

the Earth to transmit the actual voice but also to connect to the credit card circuit. When the call is over, the billing and electronic payment procedures take place.

As the flight approaches the destination, the pilot gets information from the control tower about the weather, the estimated time of landing and the connecting flights. That information is shared with the passengers by public announcements and/or displaced on the monitors.

When the passengers arrive at the arrival gate of the airport they usually go through the passport control queues leading to the passport control. After passport control is passed, it is important that the baggage is transferred to the belt fast enough and safely. In case of a lost baggage, passenger get the assistance of customer service. There the baggage is traced, and once located baggage is delivered to the address of passenger's preference. This may take up to 2 days, depending on the final destination of the passenger. Furthermore, UL offers frequent fliers program. Every customer has the opportunity to sign up for this program. The account statements include the number of miles travelled. These miles are collected and can be used to receive free gifts/flights once the required amount is achieved.

Flower of services theory explains how to break down and analyze basic service delivery process into all core and supplementary services that the UL provides for its passengers (Slidesharenet, 2016). Transported fast, on-time, safely and comfortably are the core services delivered and post flight customer care, frequent flyer program, baggage handling, on board food, on board entertainment, on board flight assistants, reservation system, airport desk, call-center, airport lounge and website are supplementary services provided by UL. Information Technology (IT) is involved throughout the service delivery process as described above and quality service is required across all delivery processes to satisfy the customers. So to measure the IT service quality IT service quality measurement framework (Lepmets et al., 2013) was used. However, the actual conditions at SriLankan Airlines did not allow full application of this framework.

1.2 Problem Statement

SriLankan Airlines continues to expand while capitalizing on the market opportunities and the steady growth of global travelers and tourists to Sri Lanka. SriLankan spread its wings into every aspect of travel and tourism to become a leading corporation in its field. However, there is a fierce competition in airline industry because all are trying to gain their own market share by using different strategies such as providing excellent customer services, cheap tickets and more benefits to the passengers (e.g., extra baggage allowance).

Therefore, to compete with other international airlines, it is important to first identify the Sri Lankan's position with respect to other airlines. According to Skytrax, a leading airline reviewer, SriLankan has a 3-star rating while world's top airline like Cathay Pacific Airways, Qatar Airways and Singapore Airlines have a 5-star rating (SKYTRAX, 2016). Airline website, airport ticket counters, check-in (self-serve and staffed counters), airline lounges (First and Business Class lounges, arrival lounges), boarding services, transfer services, arrival services, delay/incident handling are the evaluation criteria while ranking an airport. In addition to that, cabin services are assessed by using cabin seating, cabin safety procedures, cabin cleanliness, cabin comfort amenities, cabin announcements, onboard catering, duty free service, newspapers and magazines, airline magazine, inflight entertainment, and cabin staff service. In 7-star assessment criteria for full service airlines, SriLankan has 5.5-start rating. Assessment criteria includes seat pitch in economy class, in-flight entertainment, website information, flat beds, meals, blankets and pillows, and editor's discretionary (Airlineratings, 2016).

According to the flightStats, a world famous on-time performance evaluator, between October 15 and December 15, 2014 SriLankan's flights on-time performance was only 73% (Flightstats.com, 2016). 13% of cases were classified as late, 5% as very late and 6% as excessively late. Whereas for Cathay pacific, departures on time performance was 78% and arrivals on time performance was 74%.

These numbers show that SriLankan comply with the industry standards and regularly maintain the industry benchmarks. While this is commendable, SriLankan's competition has set a much higher bar and continuing to raise it far beyond the

minimum industry standards. Contemporary passengers not only expect higher levels of service, but also are aware of various amenities offered by modern airlines. In an era where passengers have multiple choices, and are more knowledgeable, have easy access to information, and can easily spread the bad word, it is imperative for an airline to be par with the competition or even outcompete them. So continuous improvement in service quality is vital. Stemming from the fact that you cannot improve what you cannot measure, therefore measuring is required before enhancing. Hence, the problem that this research try to address is:

What are the critical factors that affect service quality at SriLankan airlines and what actions are required to enhance the service quality?

1.3 Research Objectives and Motivation

This research focuses on the Information Technology (IT) related factors that affect the service quality at SriLankan Airlines. As IT spans across all form of services processes that are required to provide airline services, as well as it is an essential tool to measure and improve each service process, it has a wider impact to the problem statement outlined in previous section. Hence, our objective is to enhance the airline service quality at SriLankan Airlines through enhance IT service delivery. Following are the specific objectives that this research try to achieve:

- Identify critical factors that affect IT service delivery using IT service quality measurement framework, using the data that is already available at SriLankan airlines.
- Identify a set of recommendations address the known issues as well as to enhance the IT service delivery to be par with or even go beyond other international airlines.

1.4 Outline

Chapter 2 presents the knowledge acquired from the literature survey related to the research topic. Once of the key related work is the IT service quality measurement

framework, which is used to measure the current IT service quality at SriLankan. Chapter 3 presents the research methodology. Evaluation of SriLankan Airlines based on the IT service Measurement framework is presented in Chapter 4.Chapter also present key recommendations identified during the stakeholder interviews. Chapter 5 discusses the conclusion of this research study and future works. This consists with recommendations actions to enhance IT service quality at SriLankan.

Chapter 2 - Literature Review

2.1 Airline Services

Air transportation service is used to transport passengers, luggage and freights via an aircraft between two airports to provide place and time benefit. While air transportation operations are performed by airline companies, they rely on many other parties/services such as civil aviation services at airport, airport ground handling, catering, fueling, security, customs and air traffic controlling. It is important to consider all these services as one whole services, as failure of one sub-service could lead to a catastrophic failure of the whole service. This is identified in concepts such as Gate-to-Gate (G2G) concept, which consists of the many service processes from the beginning to the end of the airline service. Another is Airport Collaborative Decision Making (ACDM) that supports and encourages all the shareholders to work in cooperation (Eurocontrol, 2011a). The Airline Service Process (ASP) is defined as the combination of the different operation steps complementary to the various companies that contribute directly and indirectly to each other at the airport.

The air transportation service consists of the strategic, tactical and operational activities that begin months before the date of travel. Therefore, the steps can be divided into two parts as the *preliminary steps of airline service process* and *airline service process* steps.

2.1.1 Preliminary Steps of Airline Service Process

The aviation authority, airline companies, airport companies, and ground handling companies, freight sender, and passenger are taken as the focus groups of preliminary steps in ASP. Airport companies are the most important infrastructure provider of ASP. Airport authority performs annual slot allocation for the airline companies depending on the analyses and plans. The airport enterprise performs capacity allocation for seasons in two different sections as airside and landside in accordance with slot allocations. For the passenger-terminal capacity allocation, the planning is performed based on the number of counter, passport, customs and security checkpoints. The main subject of these plans is the assignment of the equipment and

personnel. For cargo facilities, the planning of storage area assignments is also required.

Figure 2.1 shows the preliminary steps of airline service process (Ates S.S., and Kagniciolu C.H, 2013). Section 2.1.2 describe airline service process in very descriptive manner. The most important step prior to ASP is that the airline company publishes their flight schedule. The airline company first conducts a market survey to identify markets that they want to operate flights. Relevant departments of the airline search for the frequency of airline service in the market, pricing policies, competitors' behavior, and code sharing within the region and cooperation opportunities to decide the city pairs (Bazargan, 2004). The company creates a draft flight schedule consisting of the city pairs that meet the priorities and technical requirements. The airline company then requests for the flight permission from the respective authority of the country to access to the markets in the draft schedule. In addition, the airline requests for slot allocation for the time slots which they intended to perform the flights from the airport company (Diederiksand Butler, 2006).

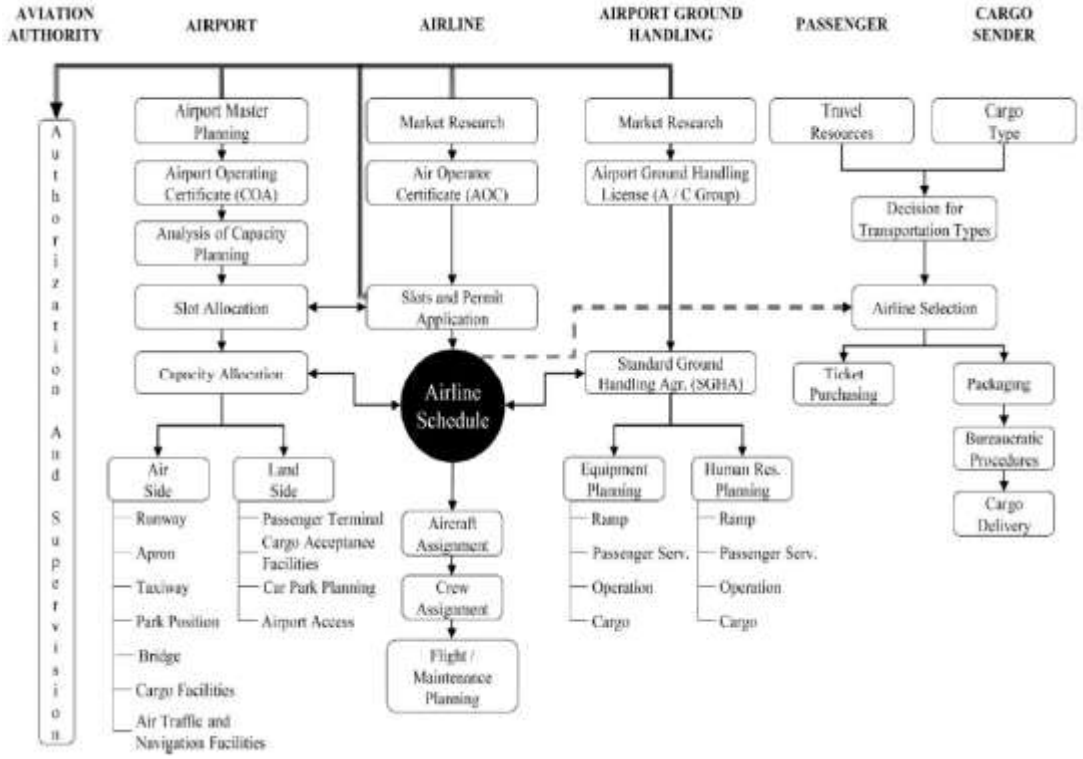


Figure 2.1 Preliminary steps of airline service process.

On the airside of the airport, the Runway, Apron, Taxi way capacity is allocated based on the airline schedules. Another operation performed before airline service process is the airside and parking position allocation plans that directly affects the ground times. On the air side, another important plan is performed based on navigation facilities.

Airport ground handling services plans on tactical level based on the flight schedules before the airline service process. A ground handling agreement is prepared between the airline and ground handling companies according to the quality and quantity of the services to be received by the airline enterprises. The airline companies prepare service agreements based on the content of Ground Operation Manual. The ground handling companies plans separately the equipment and personnel, ramp, passenger services, operation and cargo departments according to the agreement they prepare with the airline and frequencies on the flight schedule.

Passengers' different reasons for travel can be named as travel sources. On the passenger part, some of the factors determining the transportation type include the purpose of travel, destination and socio-economic characteristics of the individuals. For the preference of the airline company, the flight schedule is one of the most important factors. In addition, the ticket price, number of transfers, timeliness, duration of travel, comfort and image of airline are also important.

The air cargo sender decides the type of transport they use considering the characteristics of the load to be send. Such factors as the value, weight, and possibility of disruption are effective in determining the type of transport. The customer who decides on the air cargo dispatch makes a decision considering such factors as the dispatch price and number of transfers while choosing the airline company. Air cargo passes through the customs documentation issuing operations such as packaging, marking, coding, AWB before the flight moment (IATA, 2011b; IATA, 2009).

2.1.2 Airline Service Process Steps

The airline service process is performed within the process beginning from the point where the passenger, luggage and cargo enters into the departure airport using the land transport systems to the point where the flight ends, and the passenger, luggage and

cargo departs from the arrival airport. Although the services provided differ in their physical characteristics, passenger and cargo type, the basic purpose is to provide the flight service safely and efficiently. The services provided by the aviation companies have a similar structure with respect to the international rules. At the passenger, luggage, cargo and mail airport terminal, they get the service from one of the three different categories including arrival (domestic-international flights), departure (domestic-international) and transit. Next, each of those are briefly described.

Services Provided for the Departure Passenger

The services provided for the departure passenger begins with the entry into the airport and use of the interior ways within the airport. The car park may be required based on the type of the transport used by the passenger to access to the airport. The passenger and if any, the companions are subjected to the security checks at the entry to the terminal building. After the entry security check, the passenger arrives at the passenger terminal where facilities such as post office, bank, cafe and restaurant are provided. The passenger goes to the check-in counter, and gets a boarding card and delivers their checked-in luggage. The luggage to be loaded under the aircraft is separated from the passenger after the check-in operation. For the international flights, the passenger is subjected to passport control by the customs and security units, and then, pass through the security check. The passenger goes to the boarding gate as written on the boarding card or specified on the passenger information boards using the passenger conveniences. After the boarding operation, the passenger is transported to the aircraft and get on the aircraft.

Services Provided for the Departure Luggage

The luggage separated from the passenger during check-in process is transferred to the chute area through conveyor belts. The luggage is sorted and subjected to the security scanning. If the flight is an international one, then the luggage passes through the customs check and loaded into the luggage trolley. The luggage on the trolleys are transferred to the aircraft, and loaded into the aircraft after baggage identification.

Services Provided for Departure Crew

After the crew arrives at the airport, they use the interior ways at the airport, and if necessary, they get to the terminal building using the car park. The crewmembers are subjected to the security check at the gate to the terminal building. Then, the crew goes to the department responsible for the operation check (flight operation office, operation control center, etc.) to get the necessary documentation and information for the flight. Dispatcher and cockpit crew make a brief related to operation conditions, and approve the flight feasibility (dispatch release). After the approval, the cockpit and cabin crew get together, and share the approved flight conditions (crew briefing). If the flight is an international one, the crewmembers have to pass through the passport check. The crew gets on the aircraft prior to the passenger and checks the aircraft and service processes.

Services Provided for Departure Cargo

The services provided for the landside of air cargo process steps are different from the services provided for the other members (e.g., passenger, luggage, crew, and companions) in the focus group. The incoming of the air cargo can vary depending on the type of cargo (especially cargo or last minute cargo). After the entrance of the cargo to the airport, the cargo uses the interior ways of the airport and arrives at the cargo terminal. At the entrance of the cargo to the terminal site, the vehicle carrying the cargo is subjected to security check. The documentation related to the air cargo is received from the vehicles and checked. Then, the cargo is unloaded to the cargo terminal.

The cargo is subjected to the security check at the entry of cargo terminal building. Then they are classified as hazardous, precious, etc., based on the type and packaging. The mandatory documents are issued, and if necessary, the cargo is stored. If the cargo is an international one, it is cleared through the customs and transferred to the aircraft, and loaded into the holds of the aircraft.

Services Provided for Arrival Passenger

The passenger who gets off the aircraft is transferred to the terminal building. If the arrival passenger comes through an international flight, then the passenger is subjected to passport check. The passenger gets to the luggage conveyor belt assigned to the

flight and takes their luggage. The arrival passenger who comes from the international flights uses facilities like duty free shops, and they are subjected to the customs check. The passenger gets to the area where they can make use of such facilities as rent-a-car, bank, etc., following to the free terminal zone. If the passenger has any greeters, then the greeters can accompany the passenger following to this point. The passenger makes use of the car park, after getting out of the terminal building, if they need to do so, and leaves the airport using the interior ways of the airport.

Services Provided for Arrival Luggage

The incoming luggage is transferred to the terminal building after being unloaded from the aircraft, and they are loaded onto the luggage conveyor belts.

Services Provided for Arrival Crew

If the arrival crew does not proceed with the next flight, they can get off the aircraft after the passenger de-boarding operation is completed, and the technical crew gets on the aircraft. The arrival crew is transferred to the passenger terminal. For the international flights, the crew has to pass through the passport and customs check. If the crew does not have any documentation required to be submitted with respect to the flight performed by the crew (captain report), they can pass through the free zone and leave the terminal building. If necessary, the crew makes use of the car park, and leaves from the airport using the interior ways of the airport.

Services Provided for Arrival Cargo

After the arrival cargo is unloaded from the aircraft, it is transferred to the cargo terminal. The cargo is sorted after their documentation operations are completed, and if necessary, the cargo is stored. If the flight is an international one, then it is subjected to the customs operations. Later, the cargo is loaded onto the land vehicles to deliver it to the customer. The cargo leaves the airport using the interior ways of the airport.

Services Provided for Connected Passengers

For the connected flights, the passengers or the cargos change the flight, or wait for the next flight without getting off the aircraft at the transit airport to arrive at the destination. In this process, the passenger who changes flight from the domestic flight

to the international flight is not subjected to a further customs and passport operation, if they have already passed through the first departure airport. The passenger coming from international flight and going to another international flight is transferred to the departure. If the waiting time is too long for the connected flight, the passengers are transferred into the transit lounge, and the transit/transfer operations are performed.

Services Provided for Connected Luggage

After the luggage owned by the connected passenger is unloaded from the aircraft, the transit/transfer luggage operations are applied. After the transit/transfer operations, the luggage is loaded onto the connected flight.

Services Provided for Arrival Aircraft

The arrival aircraft is provided with the approach and final approach service from the ATC clearance and land to the runway. When the aircraft starts the final approach process, the ground handling company pulls over their service equipment to the parking position, and takes ramp safety measures and waits for the aircraft. The ramp safety measures include such operations as FOD scan, installing cones, and marshaling service. Following to the taxiway, the aircraft gets to the parking position. The aircraft is marshaled to the parking position by being routed by the ground handling or airline personnel. While these processes are going on, bridge-stairs is connected on aircraft, the loading equipment is pulled over, and the aircraft doors are opened with the clearance of the cabin crew and operation personal, and the passengers get off the aircraft. The passengers who get off and the loads are transferred to the terminal building, and the arrival aircraft service process on the air side is completed. The ground handling personnel checks the incoming aircraft for the damages by walking around the aircraft (aka. walk around check). In case of any damage, the damage forms are filled in regarding that the aircraft is arrived as damaged from the departure airport, and the airline company is informed thereof.

Services Provided for Departure Aircraft

The departure aircraft is to be visually checked by the cockpit crew before the departure of the aircraft. The operation personnel of the ground handling service company shares the information about the processes carried out for the outgoing

aircraft and other subjects (e.g., the payload and properties, the number of the passengers, etc.) by cockpit briefing with the cockpit crew. The operation personnel are informed by the cockpit crew about the fuel and optional services provided for the aircraft during ground time (equipment support based on the requirements) with cockpit briefing. The operation personnel coordinate the fueling and the loading of catering required for the flight. At the time of these processes, required amount of clean water for the flight is loaded onto the aircraft, and the dirty water is ensured to be discharged from the aircraft. The technical crew holds a technical briefing with the cockpit crew about the technical conditions of the aircraft (technical briefing), and reviews the technical logbook of the aircraft. Consequently, the technical crew and cockpit crew decide on the preventive and/or corrective maintenance operations related to the aircraft failures. Such documentation operations as the documentation used in loading the aircraft, the passenger manifest, the customs documentation for the international flights, etc., are completed at the same time. The crew release is expected to receive the passengers on board. The cabin crew confirms to take the passengers onboard, after the cleaning has been completed. As there are special conditions to be complied with for simultaneous performance of boarding passengers and refueling, the refueling is usually performed when the passenger is not on the aircraft. After the loading, the aircraft doors are closed upon the decision made by the cabin crew and operation personnel. The bridge/stairs and loading equipment are taken back, and if any, the GPU is disconnected from the aircraft. If necessary, air starter unit is used. The cones are displaced by taking ramp safety measures. When it is confirmed by the air traffic control unit, the push-back, engine start-up and taxiway processes are started. Following to the taxiway operation, the aircraft gets clearance to enter into the runway at the holding point. After aircraft gets the clearance, it enters into the runway and takes off.

2.2 Service Quality

Service quality is customer's long term, cognitive evaluations of a firm's service delivery. Customers compare what they expect to get with what they actually receive during the post purchase stage of the service purchase process. Before customers

purchase a service, they have an expectation about service quality that is based on individual needs, past experiences, word-of-mouth recommendations, and a service provider's advertising. After buying and consuming the service, customers compare its expected quality with what they actually received (Lovelock and Wright, 1999).

Delivering high service quality has been recognized as the most efficient way of ensuring that a company's offerings are uniquely positioned in a market filled with lookalike competitive offerings (Parasuraman, 1991). Improving the quality of manufactured goods has become a major strategy for both establishing efficient, smoothly running operations and increasing demanding higher and higher quality (Hoffman and Bateson, 2001). Providing high quality service and ensuring customer satisfaction are widely recognized as important factors leading to the success of the various service industries (Stevens, 1995). It is commonly believed that higher service quality can lead to a higher overall satisfaction of customers and subsequently to positive behavioral intentions. Like other service industries, service quality is an important issue in the airport management.

2.2.1 Airline Service Quality

Service quality is like beauty in the eyes of the beholder and hence a matter of perception (Rhoades and Waguespack, 2004). However, it is a measurement that plays an important role in assessing a service organization's performance, scrutinizing service problems, managing service delivery and determining corporate rewards (DeMoranville and Bienstock, 2003). Service excellence and delivering quality service are importance to service firms. Service firms like airlines emphasize their service attributes to establish a favorable image to differentiate themselves from their competitors (Gursoy, 2005). The issues concerning airline service qualities were traced back in 1978. During the deregulation of American airline industry supporters of deregulation argued that the regulation had forced competition among airlines based on service quality and not on price. Whilst, service quality is more noticeable to the passengers than safety quality (Rhoades and Waguespack, 2000). Service quality was used as a basis for judging the overall quality of the airline and hence determined satisfaction of an airline passenger (Johnston, 1995). Whilst every interaction between

a customer and an airline employee influences customer's perception of service quality. Understanding customer's perceptions of services were an essential component for airlines and providing quality services were acknowledged to be of the key factors in attracting and retaining customer's loyalty.

2.2.2 Defining Service Quality

Service quality has been defined in different ways by researchers. Kasper (1999) defined service quality as "the extent to which the service, the service process and the service organization can satisfy the expectations of the user". Parasuraman (1988) defined service quality as "a function of the difference between service expected and customers' perceptions of the actual service delivered". Gronors (1978) suggests that service quality is made of two components – technical quality and functional quality. Technical quality refers to what the service provider delivers during the service provision while functional quality is how the service employee provides the service. In the services marketing literature, the quality construct can be summarized as providing customer value (Feigenbaum, 1951), conformance to requirements (Crosby, 1979), fitness for use (Juran, 1974) and meeting customers' expectations (Parasuraman, 1985). Service quality can be defined as a *consumer's overall impression of the relative efficiency of the organization and its services*. Understanding exactly what customers expect is the most crucial step in defining and delivering high-quality service. Singapore Airlines, British Airways and American Airlines are among the few airlines that have successfully positioned themselves globally as offering excellent service quality (Chan, 2000b).

2.2.3 Measuring Service Quality

Measuring service quality is challenging. Studies suggests that the first airline service quality came to limelight in America in 1991 (Janawade, 2012) where AQR system was developed by the Aviation Institute at University of Nebraska, Omaha. However, it was later criticized as it considered just basic services like on-time percentage, flight issues, denied boarding's, refunds and fare complaints, and not airline customer

amenities like seat comfort, ease of check-in, airline schedule availability and meal quality. As the overall quality of airlines became subject of discussion, service quality data were released as the Department of Transportation's air travel consumer report 1987-2002.This report emphasized total service quality, total safety rate and passenger satisfaction of American airlines.

Passenger satisfaction was measured by travel public's perception of airport check-in, schedule/flight information, on time performance, gate location, aircraft interior, flight attendants, post flight services, seating comfort, food services and frequent flier programs were judged. However, the total service quality was represented by the percentage of late flights, total consumer complaints, total mishandled baggage and total involuntary denied boarding per year divided by the total yearly departures of a particular airline. Safety rate was calculated as the sum of the total accidents, incidents, near mid-air collisions, pilot deviation per year divided by the total yearly departures of a particular airline. Together, these quality issues represent the quality problems per departure (Rhoades and Waguespack, 2004). As quality is a matter of development of processes, execution, training, tracking and regular improvements. An airline can institutionalize a quality process for better operations with necessary skills and tools. However, to improve service quality, a firm commitment of an airline can equate the same skills to the service side of the operation (Rhoades and Waguespack, 2000).

As airlines provide experiences and performances but not physical objects, experiences and performances differ from service provider to service provider as well as from customer to customer (Gursoy, 2005). Therefore, the structural content of the service as a process may influence the service evaluations by the consumer. In service quality research, literature suggests various concepts of measuring quality. To date, several researchers have proposed a finer measure to evaluate airline service quality. It is perceived that the airline service quality as a multidimensional construct and using on time performance may not address the total service quality of an airline (Parast and Fini, 2010). Wen and Lai (2010) measured airline service quality based on airfare, schedule time difference, flight frequency, on time performance, airport check in service, in-flight seat space, in-flight food and beverage service. Tiernan (2008) measured service quality of international airlines in the America and Europe based on

percentage of not cancelled flights, percentage of passengers filling baggage lost, damaged, delayed or stolen, and on-time performances. Babbar and Koufteros (2008) suggested that an element of personal touch and nature of an employee's attention, helpfulness, promptness, and courtesy enables better management of quality. However, many researchers like Tsaur (2002), Sultan and Simpson (2000), Chen (1994) and Frost and Kumar (2001) measured airline service quality based on Parasuraman's Servqual service quality model (1988). The Servqual instrument is based on five service quality dimensions that were obtained through extensive focus group interviews with consumers. The five dimensions include tangibles, reliability, responsiveness, assurance, and empathy, and they provide the basic skeleton underlying service quality (Hoffman & Bateson, 2001). However, Robeldo (2001) challenged Servqual and created his own airline service quality measurement model called Servpex.

2.3 IT Service Quality Measurement Framework

"Quality" means meeting a business need or satisfying requirements. These definitions apply to IT Services just as they do to anything else. The IT Infrastructure Library (ITIL) Service-Level Management process is responsible for translating each IT customer's business needs into statements of IT Service Requirements, and ultimately the Service Level Agreement (SLA).

Those SLAs' become the basis for judging the quality of service delivered to each IT customer. This means that IT service quality is not just a matter of lots of capability, fast responses, high availability, etc. Whereas IT service quality is a matter of ensuring the capabilities, response times, availability, etc., that the business needs as documented in the SLA.

IT service quality must be measured from the perspective of the ultimate customer of that service. The quality of the individual pieces drives the quality of the service, but is not the ultimate measure of service quality (Askprocesscom, 2016).

The IT service quality measurement framework (Lepmets et al., 2013) was selected because it was developed in December 2013, and has undergone multiple rounds of

validation by relevant stakeholders. Moreover, it provides both quantitative and qualitative measures to cover many related aspects of IT service quality.

The aim of building this framework was to propose a set of measurable elements that make up a service offering that the service providers could improve quality of the IT services they offer and address the areas where provider driven IT service improvement is needed. Proposed framework is shown in Figure 2.2. This framework comprises of six common issue areas that are classified as intrinsic and extrinsic. The five intrinsic common issue areas are (a) IT service quality, (b) information system (IS) quality, (c) process quality, (d) value of the IT service, and (e) service behavior. The only extrinsic common issue area is the customer satisfaction.

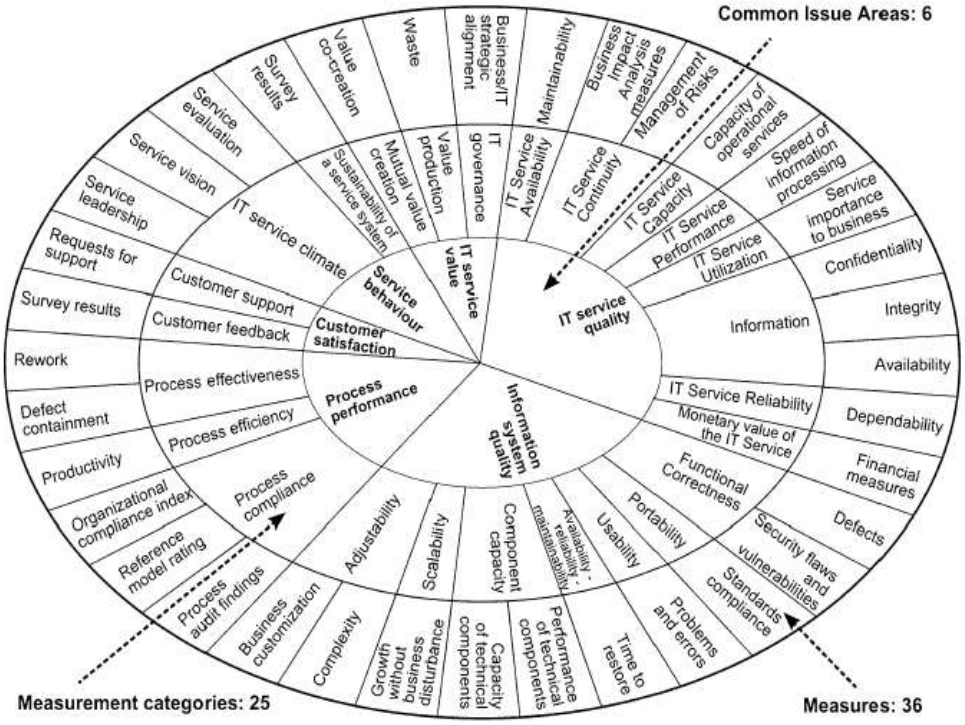


Figure 2.2 IT service quality measurement framework (without indicators). Source: Lepmets et al. (2013).

Figure 2.2 further illustrates the measurement categories and the measures of the extended framework. In the center of the circle, there are six common issue areas further divided into 25 corresponding measurement categories and 36 measures. Every measure has one or more measurable indicator(s).

The common issue area of *IT service quality* describes the measures that support the stability of the IT service, since the constant quality of the service is one of the most important but also one of the most difficult aspects faced by the service industry (Polter et al., 2008). The common issue area of *Information system quality* relates to the system's ability to support the IT services delivered. The aim of common issue area of *Process performance* is to measure process effectiveness, efficiency and compliance using standards vital to the business. IT employees' shared perceptions of the practices and behaviors in their workplace, which is highly influential on client evaluation of service quality (Jia and Reich 2011), is summarized in the common issue area of *Service behavior*. Finally, analyzing the measures of the *IT service value,* another common issue area, helps the provider determine whether gearing its activities and processes towards supporting customer's practices will generate productivity gains that can be shared as value to the customer and value to the provider (Lepmets et al., 2013). The extrinsic measures of the *Customer satisfaction* common issue area illustrate the perceptions of the IT service from the customer viewpoint.

2.4 Sri Lankan Airlines Ltd.

2.4.1 Corporate Profile

SriLankan Airlines was launched in 1979 as the national airline of Sri Lanka. It is currently expanding and further diversifying its wide range of products and services in order to drive the country's ongoing boom in tourism and economic development. The airline's hubs are located at Bandaranaike International Airport in Colombo and Mattala Rajapaksa International Airport, Hambantota providing convenient connections to its global route network of 95 destinations in 44 countries (including codeshare operations) in Europe, the Middle East, South Asia, Southeast Asia, the Far East, North America, Australia and Africa.

It joined the Oneworld airline alliance on May 1, 2014 as the first carrier from the Indian Sub-continent. SriLankan now flies alongside some of the biggest and premier brands in the airline business – Air berlin, American Airlines, British Airways, Cathay Pacific, Finnair, Iberia, Japan Airlines, LAN, Malaysia Airlines, Qantas, Royal

Jordanian and S7 airlines. With its OneWorld membership, the flagship carrier of Sri Lanka offers its customers more services and benefits: such as a wider route network, opportunities to earn and redeem frequent flyer miles on any one of the OneWorld carriers.

Mutual code-share services are established with Etihad Airways, Malaysia Airlines, Air Canada, S7, Oman Air, Finnair, Asiana Airlines, Alitalia, Japan Airlines and Mihin Lanka. Air India and Saudi Arabian Airlines also code-share on some of SriLankan routes. It operates a fleet of 22 aircraft including wide-bodied A340 and A330 aircraft, A321 aircraft and mid-range A320s.

Global workforces of approximately 6,800 employees are in Sri Lanka and overseas. The airline has strong training programs in all aviation related fields, to cater to its own expansion and the constant need to replace its staff, in high demand by other airlines.

The SriLankan fleet contains luxurious seats that have ample pitch and width. Seating is in a two-class system of Business and Economy. Business classes on long haul aircraft are equipped with flatbed seats. The AVOD in-flight entertainment system has the latest Audio and Video on Demand function with games. Complementing this facility are the wide screens with superior high-resolution picture quality for infinite viewing pleasure. Also available is the air-show with forward and downward cameras and video games in most seats.

SriLankan Holidays is the leisure arm of the airline, which promotes travel to and from Sri Lanka, and within all points throughout the airline's network. SriLankan Holidays collaborates with many leading hotels, tour operators and other tourism related organizations to give travelers a wide selection of holiday opportunities with an all-inclusive concept, which includes customized packages. SriLankan Holidays won the prestigious title of Best Outbound Tour Operator at the Presidential Awards for Travel and Tourism in 2008 and in 2009. For information visit www.srilankan-holidays.com

SriLankan Air Taxi entered into a codeshare agreement with Cinnamon Air to provide easy access to many picturesque locations across the country. With the new code share agreement, all Cinnamon Air scheduled flights will operate with SriLankan Airlines' designated flight numbers as well of those of Cinnamon Air (C7).

FlySmiLes, the frequent flyer programme of SriLankan Airlines, offers its members an extensive range of benefits, with the Airline's induction to the OneWorld airline alliance in May 2014. FlySmilLes is made up of five tiers namely Platinum, Gold, Classic, Silver and blue. FlySmiLes Club, the top tier frequent flyer categories, comprised of Platinum, Classic and Gold, are matched with the corresponding OneWorld top tiers. Together with OneWorld, FlySmiLes members can now enjoy access to over 600 lounges in over 150 airports and connections to almost 1,000 destinations across the globe on any OneWorld member carrier while enjoying free tickets, upgrades, lounge access, additional luggage allowances, pre-assigned seating and priority confirmation when flying SriLankan. With its line-up of airline and non-airline associates ranging from hospitality, retail and transportation partners, FlySmiLes continues to reward its loyal customers with more opportunities to earn and redeem miles.

Sri Lanka is a popular destination for business events in the South Asian region. The airline has a separate department for MICE Tourism that works with local partners to arrange many types of events.

SriLankan has a special focus on sports tourism and supports all major sporting events in Sri Lanka. The airline also sponsors Surfing classics in Sri Lanka and the Maldives; the International Rugby Sevens; the SriLankan Golf Classic in Sri Lanka; and co-sponsors several events that focus arts and culture.

SriLankan's IAA, caters to manpower requirements of airlines, airports, travel agents, and other aviation industry organizations. It is accredited with the IATA, DGCA, SLIM, University of Moratuwa and the TAASL.

The SriLankan Technical Training School, which is certified to the EASA 147 standard by the European aviation body, provides comprehensive basic and aircraft type training for both internal engineers as well as external individuals. The aviation authorities of Pakistan and the Maldives also accredit it.

The community development arm of the airline, SriLankan Cares actively participates in fundraising and charity activities, with its focus being the empowerment of children. SriLankan Cares has carried out major development projects in three rural schools in

the country, providing buildings and infrastructure such as classrooms, libraries, and computer labs.

Following is the Vision and Mission of Sri Lankan Airlines Ltd.

- Vision – To be the most preferred airline in Asia.
- Mission – We are in the air transportation business and provide our customers with a reliable and pleasant travel experience. We provide our business partners with a variety of innovative, professional and mutually profitable services. We meet Shareholder expectations of profitably marketing Sri Lanka and contributing towards the well-being of Society. We are a competent, proactive and diligent team. Our contribution is recognized and rewarded.

2.4.2 Corporate Organization Chart

Figure 2.3 shows the Sri Lankan Airlines Organization chart, which has a relatively flat structure.

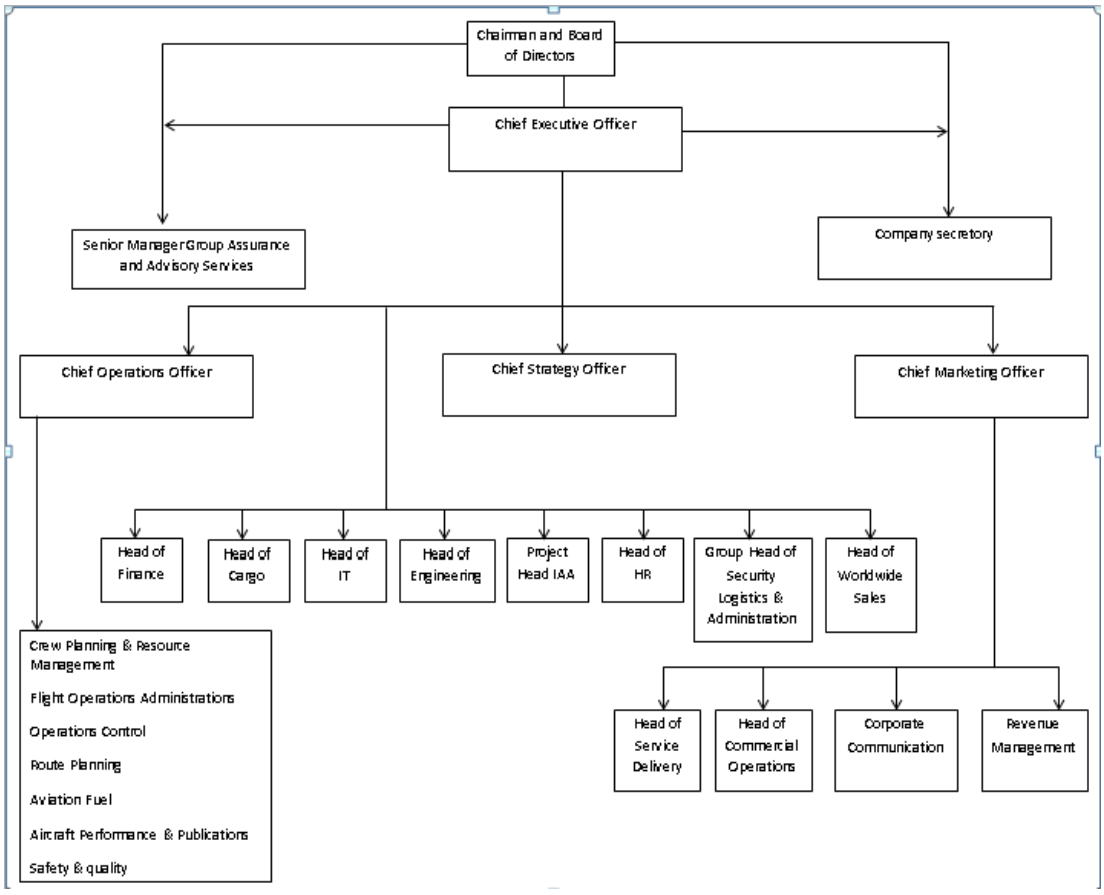


Figure 2.3 Organizationalchart of SriLankan airlines. Source: Srilankan Airlines Ltd (2016).

2.4.3 Sri Lankan Services

2.4.3.1 Airport Services

SriLankan offer our customers all range of airport services as per the SGHA of 2008 January, published by IATA. We provide tailor made services to suit specific needs of each of our customers offering all or a mix of the following services:

- Aircraft maintenance
- Aircraft servicing and cleaning
- Airport aviation security
- Cargo and mail handling (on-/off-airport)
- Catering services
- Flight operations and crew administration
- Coordination of Fueling with relevant parties
- Load control and communications
- Passenger and baggage handling
- Ramp services
- Representation and accommodation
- Station supervision and administration
- Surface transport of passengers and crews
- Unit Load Device control and management
- Hotel accommodation and leisure activities

2.4.3.2 Engineering

For over thirty years, SriLankan Airlines Engineering has remained a consistent benchmark in aircraft maintenance, providing the highest quality of maintenance services with staff strength of 600 well-trained, highly qualified and dedicated engineering staff, using state-of-the-art technology.

Sri Lankan today a provider of comprehensive aircraft maintenance services in the region, under approval from Civil Aviation Authority of Sri Lanka, the European Aviation Safety Agency and several other National Aviation Authorities. Strategically located at the Colombo International Airport, company indeed a convenient and cost-effective one-stop-shop for all your integrated aviation maintenance and engineering needs.

Capabilities on Airframe, Engines, Component Maintenance and Inventory Management, along with its international offices and line facilities are located in South India and Male, enables us to provide line maintenance support at important locations in the region and comprehensive base maintenance support in Colombo, right up to 8C/12Y maintenance.

2.4.3.4 Cargo

General Freight

SriLankan cargo has the most economical global distribution cargo service for general freight. This service is available on all SriLankan Airlines flights. Registered users can make reservations online. If passengers are not already registered, they may register online or contact one of the SriLankan Cargo offices for further details.

On Board Courier

With On-board Courier customers get an extremely convenient and economical method in transporting goods. The concept behind this product is to enable our customers to collect their cargo from the passenger belt. However, this product would perform differently from country to country due to local regulations.

Dangerous Goods

Handled only by specially trained staff in accordance with IATA laws and regulations, SriLankan Airlines provides safe and secure movement for dangerous cargo items such as explosives, radioactive materials, etc. They are constantly monitored while different loading procedures are followed in compliance with the prevailing international standards.

2.4.4 Catering

SriLankan Catering Limited is the sole airline caterer in Sri Lanka and launched in 1979 as a subsidiary of SriLankan Airlines. Its hub is at Bandaranaike International Airport where it provides services for many of the world's finest airlines. Winner of many awards in the global flight catering industry, SriLankan Catering's main line of business is in-flight catering to airlines that operate to BIA. It was recently awarded the franchise through the year 2022 to be the exclusive provider of in-flight catering for airlines at BIA, and also for food and beverage products at all of BIA's restaurants and lounges. Its state-of-the-art flight kitchen at BIA has a capacity of 25,000 meals per day and it is one of the few airline caterers in the world to hold four global certifications. The Company is currently diversifying its business operations into following hospitality related fields:

- Management of Serenediva Transit Hotel
- Management of Semondu Restaurant
- Operation of Aero Clean industrial laundry
- Outdoor Catering operations (to be launched shortly)

2.5 Airline Service Delivery Process

2.5.1 Core Services

Core service is a reason why the company is in the market. For an airline this would be transporting passengers or cargo. Transportation of passengers from A to B is the core service of an air trip. Additional services may be offered before, during or after the journey. These additional services allow to distinguish the homogeneous product of an air trip from one competitor to another. However, the core service occupies a superior position within the service chain. Punctuality, safety and comfortability are main services delivered to passengers in airline business.

2.5.2 Augmented Services

Enhancing and facilitating services that the company provided to deliver the core service. These services are used to increase the value of the service and/or to

differentiate the service from those of competitors. Airport lounges and a range of in-flight services are examples of airline-augmented services.

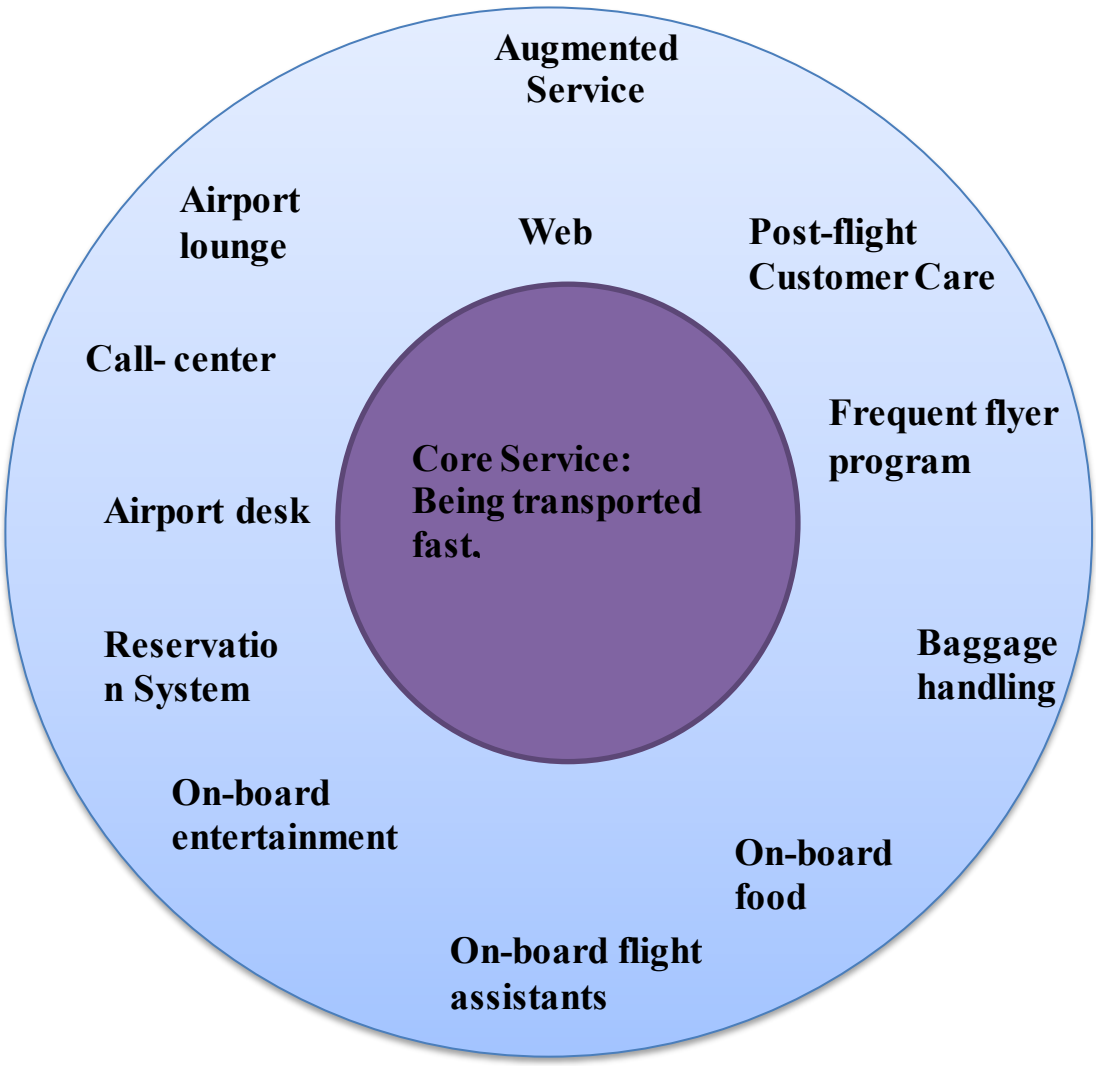


Figure 2.4 Augmented services of SriLankan airlines.

2.5.2.1 Flowers of Services

The concept of the flower of service proposes a model in which the core product is surrounded by a cluster of supplementary services, which are either facilitating services or enhancing services. The model of Flower of Service offers both researchers and companies a method of apprehending and disaggregating the series of supplementary services that enhance and increase the perceived value of the core product.

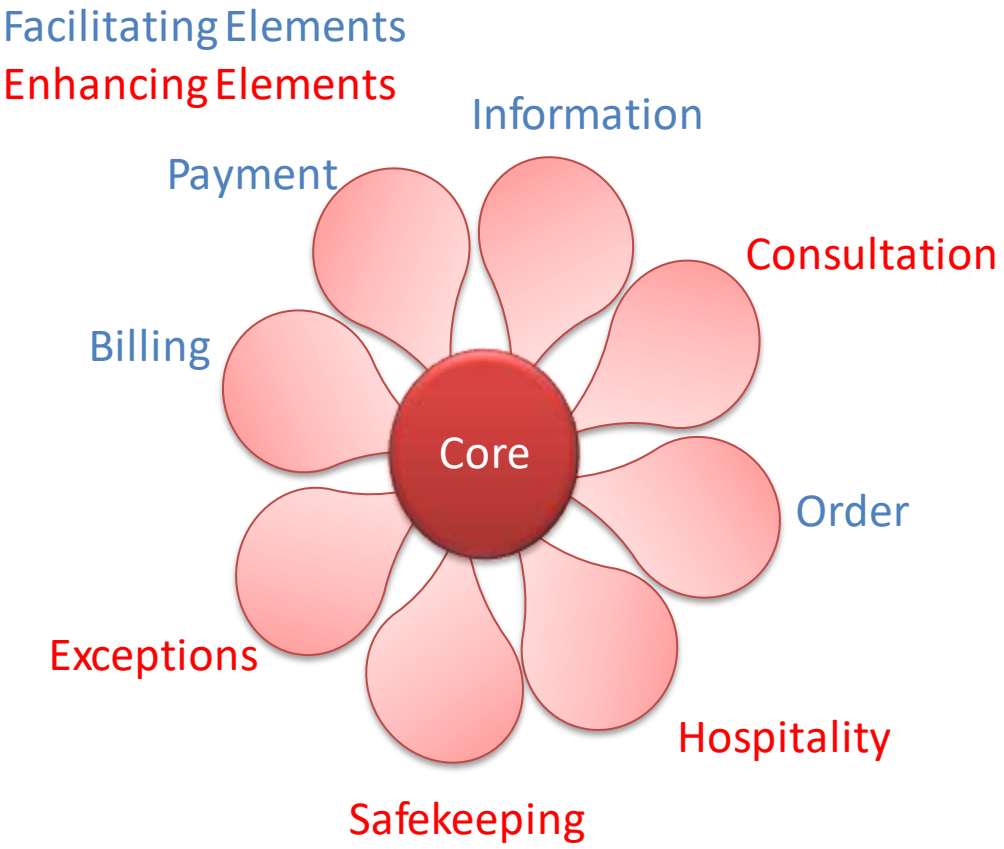


Figure 2.5 Flowers of services at SriLankan.

Information

The process starts with the information gathering before attending the flight. It is very important for the airline to advertise effectively to differentiate from the competitors so that the customer can decide which airline brand to choose. When advertising it is recommended to underline the features, services and competitive advantages of a brand, as nowadays, being the airline industry in its maturity, many brands seem to be similar in the eyes of the customer.

In recent years, so it is crucial to have a well-designed website that allows potential customer to get a feeling of what experience the company is offering and not only to compare prices and routes.

Consultation

When booking through a travel agent, it is important whether the agent knows about the subject and is able to give the customer the information he/she needs. Price in travel

agencies is higher than online so the customer expects the service, which he/she is additionally paying for. Even if the Internet is a low contact channel people may expect some form of consultation may be via email or through a specialized online chat. The same applies to the call center, even though people might already know what they want, the operator needs to be prepared to answer any specific question about the flight or the before and after flight.

Order Taking

An online booking procedure, which is common in these days, is a convenient way for the customer to make a reservation. It saves time and money. By the way, older or uneducated people still have some problem in booking through the internet. In case a problem appears while making an online booking or if the customer has a problem, the effectiveness of a call center staff is crucial.

The availability of the customer service can be an important factor when a situation like that appears. The customer service should be well informed about the products of the company and well trained in order to react properly in different situations.

Hospitality

If there are any delays the flight, it is very important for the airline to provide hospitality to the customer. For shorter delays airline gives vouchers to customers, so they can use these during the waiting times to eat or drink in the restaurants/bars at the airport. Furthermore, if there are longer delays and the customer has an overnight stay, the airline usually has to provide for a suitable accommodation for the customer in a hotel near the airport. Even if there are no delays, we must remember that the customer probably has to wait about one hour at the airport so it is important that the services cape is comfortable in order to minimize the impact of waiting time.

Safekeeping

Travelling by plane is made inconvenient for the customer by the several safety procedures that people have to attend to before and after the flight. Moreover, with recent concerns about terrorism the security procedures have become even stricter. This has an effect on the waiting times and customers, especially if frequent flyers,

may be annoyed by this lengthy process. It is important that the ground staff is friendly and patient both with experienced and inexperienced customers.

Exceptions

The airline has to be prepared in case there are customers who constitute an exception. Exceptions may be handicapped customers, elderly people and babies who need special accommodation. Exceptions can be made with food. Individual references may be considered. Furthermore, there are exceptions, which can be made with luggage.

Billing

The billing procedures should be as clear but at the same time as easy as possible. The online purchase of flights is very common lately. However, a high number of customers are skill skeptical with reveling their bank details online, so it is very important to design the billing procedures as clear and easy understandable as possible. As for the brick and mortar agencies, the bill should be standardized in order to impose consistency among the different independent agencies. Most of the time the price of the ticket include almost all the extra like inboard food and entertainment while low cost companies base their strategy on the separate bills where customers have to pay for each extra service they ask for.

Payments

The payment for the ticket is usually done at the time of the reservation either via credit card or, if done in agency, through cash or check. Payments may be asked from the customer also after the ticket has been issued, for example, when the luggage exceeds the allowance the customer has to pay certain amount because of maintenance reasons. Every airline has restrictions when it comes to the luggage allowance. Furthermore, there are certain items, which can be purchased during the flight, such as duty free products. The customers also have the opportunity to purchase additional drinks such as alcoholic beverages, which are not included with the meal. For all these in-flight payments, it is important to give customers many options. Being the plane non-place customers may expect to be able to pay with different currencies, as well as with major credit cards.

2.6 Summary

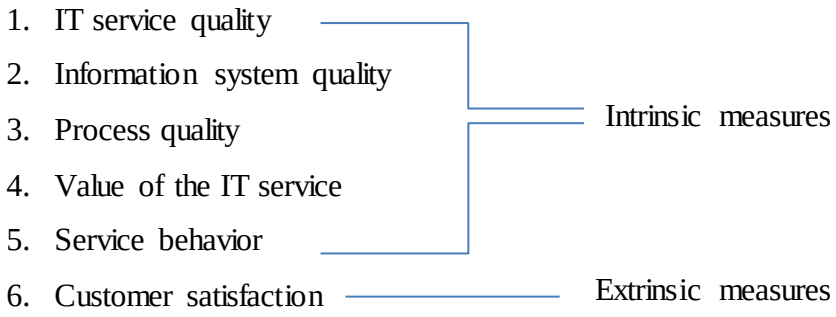
This chapter reviewed current literature available in related with airline service process steps including core and augmented services. Then moved to understand service quality, IT service quality and IT service quality measurement frameworks with company profile. Research was carried out based on this framework found in literature survey and data was collated according to the indications mentioned in this framework. In the next chapter research methodology, measures and measurements are described.

Chapter 3 - Research Methodology

This chapter presents the research methodology. It discusses the mix method approach used to measure IT service quality delivered by the IT department of SriLankan. Moreover, the approach used to identify the recommendations to enhance the quality of IT services. Research method and approach is described in Section 3.1. Section 3.2describes how the measurement and measures in the framework are applied. Section 3.4 explain about the research instrument for interviews and the sample population is discussed in Section 3.5.

3. 1 Research Method and Approach

Figure 3.1 illustrates the research methodology used for study. Based on the data collected from internal departments of SriLankan Airlines research problem was identified. It was realized that continuous improvement of IT service quality is required to be at least par with the competition. Before improving, it is important to first understand the current state of IT service quality. Then based on the literature review IT service quality framework by Marion Lepmets et al. (2013) was identified as a suitable measure to assess the current state of IT service quality through quantitative and qualitative measurements. This framework consists with six issue areas as follows:



Under six common issue areas data were collected and relevant indicators were calculated. Some of the indicators were eliminated based on company goals and objectives. Data that were not available were ignored while calculating the indicators. After calculating the quantitative indicators, those are compared with baseline values.

When applicable industry standard baseline values were considered. When such a baseline does not exist, a suitable baseline was defined. Qualitative indicators were also considered while measuring IT service quality. However, unavailability of data at SriLankan airlines related to the some of the six issue areas did not allow the full application of the IT service quality framework.

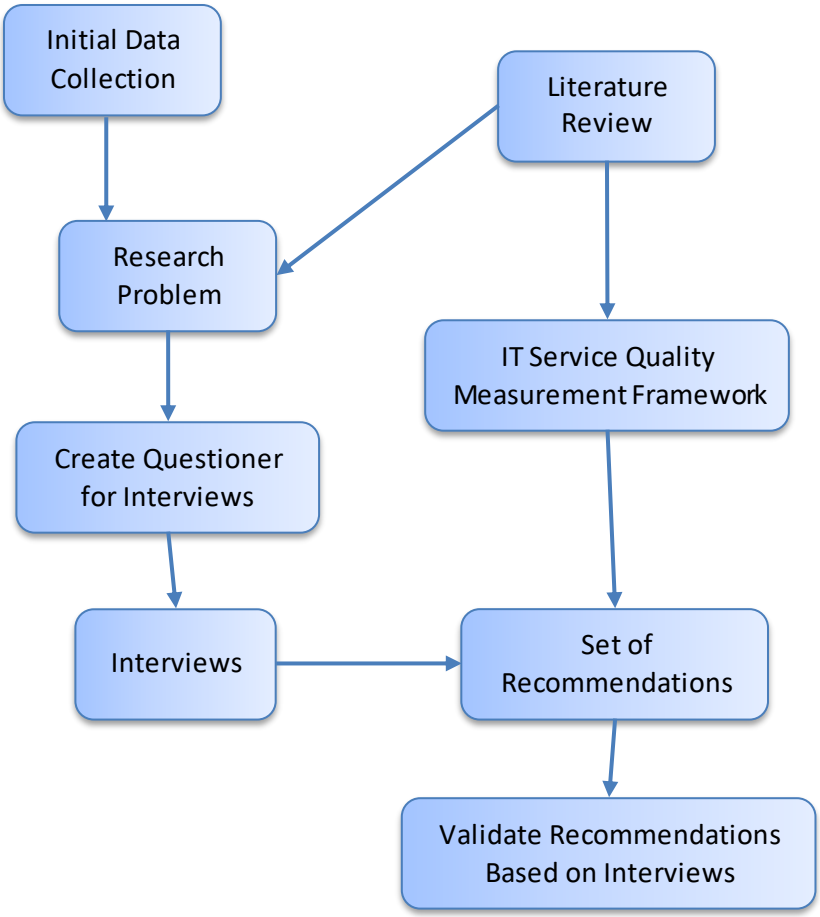


Figure 3.1 Research methodology.

Then a set of interviews was conducted to identify key factors and relevant recommendations to improve IT service quality. Ten managers were interviewed and the interview findings were coded to identify key recommendations. Those recommendations were then categorized according to the importance (as High, Medium and Low), as well as resource, financial and knowledge requirements. As a final step another three managers were interviewed to find out their views and ideas regarding the suggested recommendations.

3. 2 Assessment of IT Service Quality Using Framework

IT service quality measurement framework consists with six common issue areas as mentioned in Section 3.2. Those six areas are further divides into 25 measurement categories and sub-divided into 36 measures as shown in Table 3.1 to 3.4.

Indicator values are compared with target or baselines to measure IT service quality delivered. Target values are defined by the company itself, according to the company goals and objectives and extracted from monthly reports produced by cost centers in IT department. If target or baseline values are not available derived those values from already defined values. Those derived baselines are Incidents related to IT service capacity, Incidents related to IT service performance, Incidents related to information confidentiality, Incidents related to information availability, Incidents RFCs & problems handled daily. To calculate the baseline values, incidents received per month was taken as 2,500, which is a company-defined target.

Table 3.1 – Quantitative intrinsic measures of IT service quality framework.

Common Issue Area	Measurement Category	Measure	Indicator	Target or Baseline
IT service quality	IT service availability	Maintainability	Mean time to restore IT service after failure	Availability of IT systems (Hosted)-99.50% Availability of IT systems (On-premise)-99.50%
	IT service capacity	Capacity of operational services	Incidents related to IT service capacity	< 10% of Target incidents received per month (Target incidents received per month=2500)
			Changes related to IT service capacity	Target not defined
	IT service performance	Speed of information processing	Incidents related to IT service performance	< 10% of Target incidents received per month (Target incidents received per month=2500)
			Changes related to IT service performance	Target not defined
	Information security	Confidentiality	Incidents related to information confidentiality	< 3% of Target incidents received per month. (Target incidents received per month=2500)
			Changes related to information confidentiality	Target not defined
		Integrity	Incidents related to information integrity	Target not defined
			Changes related to information integrity	Not measured
		Availability	Incidents related to information availability	<3% of Target incidents received per month. (Target incidents received per month=2500)
			Changes related to information availability	Target not defined
	IT service reliability	Dependability	Incidents, RFCs &problems handled daily	No of incidents handled daily-(2500/30)
			Mean time to achieve incident resolution	IT Incident Resolution Rate -85%
	IT service continuity	Business impact analysis measures	Mean time to recovery	Target not defined
			Incidents related to IT service continuity	Target not defined

Common Issue Area	Measurement Category	Measure	Indicator	Target or Baseline
			Changes related to IT service continuity	Not measured
	Monetary value of IT service	Financial measures	Price– actual price paid for received service	Target not defined
Information system quality	Functional correctness	Defects	Defect density	Target not defined
	Portability	Standards compliance	Interface compliance validation	Target not defined
	Usability	Problems and Errors	No of prevented problems daily	Target not defined
			No of incidents related to problems daily	Target not defined
	Availability– reliability– maintainability	Time to Restore	MTBSI – mean time between system incidents	Target not defined
			MTBF – mean time between system failures	Target not defined
			MTRS – mean time to restore system	Target not defined
			No of incidents resolved out of all incidents	Incident Completion Rate -90%
	Component capacity	Performance of technical components	No of system failures related to component performance	Target not defined
		Capacity of technical components	No of system failures related to component capacity	Target not defined
	Scalability	Growth without business disturbance	Incidents related to the speed of growth	Target not defined
Process performance	Process effectiveness	Defect containment	Requirements defects discovered after design phase	Target not defined

Table 3.2 - Quantitative extrinsic measures of IT service quality.

Common Issue Area	Measurement Category	Measure	Indicator	Target or Baseline Value
Customer satisfaction	Customer feedback	Survey results	Appearance of physical facilities, equipment, personnel &communications material	Target not defined
			IT service is provided dependably &accurately	Target not defined
			IT service provider is willing to help customers& provide prompt service	Customer Satisfaction 70%
			IT service provider conveys trust &confidence	Target not defined
			IT service provider provides caring, individualized attention	Target not defined
			Perception of IT service stability Perception of IS quality	Target not defined
			Perception of IT service processes' performance	Target not defined
	Customer support	Requests for support	Total calls per day answered, abandoned	Calls Abandoned – 10% Calls Received - 9000
			Average call response time	Target not defined
			Incidents handled daily by service desk	Incident Completion Rate - 90% Incidents Received - 2500

Table 3.3 –Quantitative extrinsic and intrinsic measures of IT service quality.

Common Issue Area	Measurement Category	Measure	Indicator	Target or Baseline Value
IT service value	Mutual value creation	Value co-creation	Revenue growth for both the supplier &customer	IT spend over Revenue –Cumulative -0.09%

Table 3.4 - Qualitative intrinsic measures of IT service quality.

Common Issue Area	Measurement Category	Measure	Indicator	Target or Baseline Value
IT service quality	IT Service Continuity	Business Impact Analysis measures	Business impact on service unavailability	Target not defined
			Business impact on service performance degradation	Target not defined
			Business impact on delayed solutions	Flight punctuality- 85%
			Business impact on the loss of IT service(financial)	Not measured
	IT Service Utilization	Service importance to business	Utilization rate of IT service functions	5% increase compared with previous month (only for passenger usage)
	Monetary value of the IT service	Financial measures	Cost - actual cost for service provider to provide the service	Target not defined
			Accuracy of service operation functions' forecast	Target not defined
			Competitiveness of service	Target not defined
Information system quality	Functional correctness	Security flaws &vulnerabilities	Defect density	Target not defined
	Adjustability	Complexity	System complexity	Target not defined

Common Issue Area	Measurement Category	Measure	Indicator	Target or Baseline Value
		Business customization	System adjustability	Application enhancement(Change request-in-house)-15
Process performance	Process compliance	Process audit findings	Process audit results	Target not defined
		Reference model rating	Process assessment results	Target not defined
		Organizational compliance index		
	Process efficiency	Productivity	Historical vs. proposed &actual	Target not defined
	Process effectiveness	Rework	Rework effort	Target not defined
Service behavior	IT service climate	IT service provider's employee survey results on: Service leadership	Work performance goals are regularly discussed with employees	Target not defined
			Employees know how provided service contributes to better performance of clients	Target not defined
			Best approaches to serve clients are discussed regularly	Target not defined
			Emphases of daily work are on providing excellent service to clients	Target not defined
		Service vision	Effort is made by service provider to be a respected partner to clients	Target not defined
			Being flexible when dealing with clients' perspectives	Target not defined
			Frequent communication with clients	Target not defined

Common Issue Area	Measurement Category	Measure	Indicator	Target or Baseline Value
		Service evaluation	Recognition and rewards given for providing excellent client service	Target not defined
			Evaluation of how clients were served was a part of the most recent personal performance review	Target not defined
			Customer service is an important criterion of formal performance evaluation	Target not defined
Sustainability of a service system		Survey results	Saturation &sustainability of resource quantity	Target not defined
			Resource quality–capability &reliability of resource (education level &experience)	Target not defined
			Resource sustainability to maintain certain level of quality	Target not defined
Value	Value production	Waste	Non-value added activities	Target not defined
	IT governance	Business/IT strategic alignment	IS audit results	Pass

3. 3 Research Instrument for Interviews

Recommended actions to enhance the IT service quality was found out using a set of interviews. The specific questioner is given in Appendix A. This questioner was prepared based on the data collected initially from IT department and literature review conducted. It mainly consists of three questions. Each main questions has a set of sub-questions.

3. 4 Sample Population

Initial data collection was carried out based on random sampling of documents and literature that were easier to find. Once the problem and research methodology were finalized, data were then collected according to the indicators mentioned in IT service quality framework. After that, selected sub-set of relevant managers and department heads were interviewed to find the recommended actions to enhance the IT service quality. Selected list of interviews are as follows:

1. Manager IT Projects & Systems Integration – IT Department
2. Manager IT Business Relations – IT Department
3. Manager IT Business Development & Agreements –IT Department
4. Manager Product Development – Marketing - Product Development
5. Flight Operations Manager (Punctuality Improvement)– Flight Operations
6. Airport Service Manager– Airport Service Delivery
7. Senior Manager Aircraft Engineering– Aircraft Engineering
8. Manager Promotions And Brand Management–Marketing - Corporate Communications
9. Customer affairs Manager– Customer Affairs
10. Head of Service Delivery –Service Delivery Department

Then for the second round of interviews that were conducted to get feedback for the identified recommendations and prioritize them, IT department head and two managers were interviewed. Those interviewees are as follows:

1. Head of IT– IT Department
2. Manager IT Business Systems (Service Delivery, Flight Operations & Engineering) – IT Department

3. Manager IT service desk– IT Department

3. 5 Summary

This chapter presented the research methodology used in the study. 36 indicators were found out through literature review and those are tested in this study. Baseline values defined by the company and industry standards are used to measure the IT service quality. As a second phase, interviews were used as the method of data collection to find out the recommended actions to enhance the IT service quality. Second round of interviews were used to get industry expertise opinions regarding suggested recommendations.

Chapter 4 - Data Analysis

This chapter analyses the data collected through monthly reports and questionnaire based interviews. Section 4.1.1 analyzes values related to IT service quality framework and Section 4.1.2 explains the prioritize recommendation list.

4. 1 Measurements of Quality Framework

Indicators are calculated to measure the overall IT service quality delivered by IT department. Some of the relevant indicators are directly taken from the KPIs in various reports such as monthly progress reports (For the month of February and March in2016) produced by cost centers in IT department and monthly reports (For the month of February and March in 2016) produced to present senior management team. Then those values were compared with the baseline values from the industry and provided by the company to measure the IT service quality.

While the IT service quality measurement framework consider six common issue areas, according to the company goals and objectives only four areas are applicable for SriLankan. Those are IT service quality, information system quality, customer satisfaction and value of the IT service. Table 4.1 lists the basic characteristics required to deliver a high quality service. Table 4.2 lists the quantitative intrinsic measures of IT service quality. Quantitative intrinsic measures of Information system quality is listed in Table 4.3. Table 4.4 lists the quantitative intrinsic measures of process performance. Quantitative intrinsic measures of customer satisfaction is listed in Table 4.5. Table 4.6 lists the quantitative extrinsic and intrinsic measures of IT service value. Qualitative intrinsic measures of IT service value is listed in Table 4.7. Table 4.8 lists the qualitative intrinsic measures of information system quality. Qualitative intrinsic measures of process performance is listed in Table 4.9. Table 4.10 lists the qualitative intrinsic measures of service behavior and qualitative intrinsic measures of IT service value is listed in Table 4.11. Based on these, it can be seen that the IT service quality

measures can only be applied to about 25% of the quantitative and qualitative measures due to lack of data.

Table 4.1 – Characteristics of SriLankan Airlines Ltd.

Company Size	Core Business	Client Sector	ITIL	QMS
Large	Airline	Travel	V3	ISO 9001:2008

Table 4.2 – Quantitative intrinsic measures of IT service quality.

Measurement Category	Measure	Indicator	Mean Value	Actual	Target or Baseline
IT service availability	Maintainability	Mean time to restore IT service after failure	Availability of IT systems (Hosted)	99.90%	99.50%
			Availability of IT systems (On-premise)	99.90%	99.50%
IT service capacity	Capacity of operational services	Incidents related to IT service capacity	No of incidents related to service capacity per month	143	250 (< 10% of Target incidents received)
		Changes related to IT service capacity		Data not found	
IT service performance	Speed of information processing	Incidents related to IT service performance	No of Incidents related to IT service performance per month	507	250 (< 10% of Target incidents received per month)
		Changes related to IT service performance		Data not found	
Information security	Confidentiality	Incidents related to information confidentiality	No of incidents related to information confidentiality per month	455	75 (< 3% of Target incidents received per month)
		Changes related to information confidentiality		Data not found	
	Integrity	Incidents related to information integrity		Data not found	
		Changes related to information integrity		Data not found	
	Availability	Incidents related to information availability	No of Incidents related to information availability per month	871	75 (< 3% of Target incidents received per month)

		Changes related to information availability		Data not found	
IT service reliability	Dependability	Incidents, RFCs and problems handled daily	No of incidents handled daily	80	2500/30(Target incidents received monthly2,500)
		Mean time to achieve incident resolution	IT Incident Resolution Rate	93%	85%
IT service continuity	Business impact analysis	Mean time to recovery		Data not found	
		Incidents related to IT service continuity		Data not found	
		Changes related to IT service continuity		Data not found	
Monetary value of IT services	Financial measures	Price—actual price paid for received service		Data not found	

Table 4.3 –Quantitative intrinsic measures of Information system quality.

Measurement Category	Measure	Indicator	Mean Value	Actual	Target or Baseline
Functional correctness	Defects	Defect density		Data not found	
Portability	Standards compliance	Interface compliance validation		Data not found	
Usability	Problems and Errors	Number of prevented problems daily		Data not found	
		Number of incidents related to problems daily		Data not found	
Availability–reliability–maintainability	Time to Restore	Mean time between system incidents		Data not found	
		Mean time between system failures		Data not found	
		Mean time to restore system		Data not found	
		Number of incidents resolved out of all incidents	Incident Completion Rate	94.4%	90%
Component capacity	Performance of technical components	Number of system failures related to component performance		Data not found	
	Capacity of technical components	Number of system failures related to component capacity		Data not found	
Scalability	Growth without business disturbance	Incidents related to the speed of growth		Data not found	
Process effectiveness	Defect containment	Requirements defects discovered after design phase		Data not found	

Table 4.4 – Quantitative intrinsic measures of Process performance.

Measurement Category	Measure	Indicator	Actual Mean Value	Target or Baseline Value
Process effectiveness	Defect containment	Requirements defects discovered after design phase	Data not found	

Table 4.5 – Quantitative extrinsic measures of Customer satisfaction.

Measurement Category	Measure	Indicator	Mean Value	Actual	Target or Baseline
Customer feedback	Survey results	Appearance of physical facilities, equipment, personnel and communications material		Data not found	
		IT service is provided dependably and accurately		Data not found	
		IT service provider is willing to help customers& provide prompt service	Customer Satisfaction	72%	70%
		IT service provider conveys trust and confidence		Data not found	
		IT service provider provides caring, individualized attention		Data not found	
		Perception of IT service stability Perception of IS quality		Data not found	
		Perception of IT service processes' performance		Data not found	
Customer support	Requests for support	Total calls per day answered, abandoned	Calls Abandoned Calls Received	11% 10608	10% 9000
		Average call response time		Data not found	
		Incidents handled daily by service desk	Incident Completion Rate	94.3%	90%

Measurement Category	Measure	Indicator	Mean Value	Actual	Target or Baseline
			Incidents Received	2670	2500

Table 4.6 – Quantitative extrinsic and intrinsic measures of IT service value.

Measurement Category	Measure	Indicator	Mean Value	Actual	Target or Baseline
Mutual value creation	Value co-creation	Revenue growth for both the supplier & the customer	IT spend over Revenue – Cumulative	0.07%	0.09%

Table 4.7 – Qualitative intrinsic measures of IT service quality.

Measurement Category	Measure	Indicator	Mean Value	Actual	Target or Baseline
IT Service Continuity	Business Impact Analysis measures	Business impact on service unavailability		Data not found	
		Business impact on service performance degradation		Data not found	
		Business impact on delayed solutions	Flight delay due to IT Flight punctuality	3 delays per month 86%	(Flight punctuality - 85%)
		Business impact on the loss of IT service (financial)		Data not found	
IT Service Utilization	Service importance to business	Utilization rate of IT service functions	Kiosk Check-in per month (Previous month) Hand Held Device Check-in per month (Previous month) Mobile Check-in per month (Previous month) Intranet usage per day (Previous month) Received mails per month (Previous month) Sent mails per month (Previous month)	15473 (14140) 3479 (1041) 180 (152) 1241 (1358) 886,442 (886,654) 482,849 (480,784)	5% increase compared with previous month (only for passenger usage)
Monetary value of the IT service	Financial measures	Cost - actual cost for service provider to provide the service		Data not found	
		Accuracy of service operation functions' forecast		Data not found	
		Competitiveness of service		Data not found	

Table 4.8 – Qualitative intrinsic measures of Information system quality.

Measurement Category	Measure	Indicator	Mean Value	Actual	Target or Baseline
Functional correctness	Security flaws &vulnerabilities	Defect density		Data not found	
Adjustability	Complexity	System complexity		Data not found	
	Business customization	System adjustability	Application enhancement(Change request-in-house)	10	15

Table 4.9 – Qualitative intrinsic measures of Process performance.

Measurement Category	Measure	Indicator	Actual Mean Value	Target or Baseline Value
Process compliance	Process audit findings	Process audit results	Data not found	
	Reference model rating	Process assessment results	Data not found	
	Organizational compliance index		Data not found	
Process efficiency	Productivity	Historical vs. proposed and actual	Data not found	
Process effectiveness	Rework	Rework effort	Data not found	

Table 4.10 – Qualitative intrinsic measures of Service behavior.

Measurement Category	Measure	Indicator	Actual Mean Value	Target or Baseline Value
IT service climate	IT service provider's employee survey results on: Service leadership	Work performance goals are regularly discussed with employees	Data not found	
		Employees know how the provided service contributes to better performance of the clients	Data not found	
		Best approaches to serve clients are discussed regularly	Data not found	
		Emphases of daily work are on providing excellent service to clients	Data not found	
	Service vision	Effort is made by the service provider to be a respected partner to clients	Data not found	
		Being flexible when dealing with clients' perspectives	Data not found	
		Frequent communication with clients	Data not found	
	Service evaluation	Recognition and rewards given for providing excellent client service	Data not found	
		Evaluation of how clients were served was a part of the most recent personal performance review	Data not found	
		Customer service is an important criterion of formal performance evaluation	Data not found	
	Survey results	Saturation and sustainability of resource quantity	Data not found	
		Resource quality–capability and reliability of resource (education level and experience)	Data not found	
		Resource sustainability to maintain certain level of quality	Data not found	

Table 4.11 – Qualitative intrinsic measures of IT service value.

Measurement Category	Measure	Indicator	Actual Mean Value	Target or Baseline Value
Value production	Waste	Non-value added activities	Data not found	
IT governance	Business/IT strategic alignment	IS audit results	Pass	Pass

To determine IT service quality (see Table 4.2 and 4.7) IT service availability, IT service capacity, IT service performance, information security, IT service reliability, IT service continuity and IT service utilization were Measured. Among those measurement categories IT service availability, IT service capacity, IT service reliability, IT service continuity and IT service utilization are favorable as those indicators comply with the company baselines and target values. Company expects 5% increase on IT service utilization only from services which passenger are involves. It cannot be expected from internal departments use services as number of employees are increasing very slowly. However, as seen in Table 4.2, IT service performance needs improvement as the target incidents received per month should be less than 250, whereas the actual incidents received were 507 per month. Moreover, information security also needs improvement those actual incidents received were 455 which is above the target of 250.

For information systems' quality incidents completion rate is a relevant KPI and it is 94.4%. This is higher than the target completion rate of 90 % (see Table 4.3). As seen in Table 4.5Customer satisfaction is also a favorable factor as the actual KPI is 72%, which is greater than the target of 70%.Incident completion rate 94.3% is also favorable than the baseline of 90% although IT service desk is receiving 2,670 incidents per month which is higher than the target value of 2,500. Calls received is much higher than the target where 10,608 calls were received per month while the target is 9000. However, calls abandoned is 11%, which is not good as the target rate is 10%.

Mutual value creation is also a favorable measurement category related to IT service because IT spend over revenue cumulative value is 0.07%, which is less than the target value of 0.09%. That means IT department's revenue is higher than the target as IT spend is a budgeted value defined with the start of financial year. Company complies with the IT governance because successful completion of IS audits.

Process quality and service behavior were not measured because company is not very much interested on those areas. Identified list of favorable factors and factors that need improvements are listed in Table 4.12.

Table 4.12 – List of factors which are favorable and ones that need improvements.

Common Issue Area	Favorable Factors	Factors Needing Improvements
IT service quality	IT service availability, IT service capacity, IT service reliability, IT service continuity &IT service utilization	IT service performance, Information security
Information systemquality	Availability–reliability–maintainability	
Customer satisfaction	Customer feedback, Customer support	
Value of the IT service	Mutual value creation	

4. 2 Recommendations

According to the Table 4.12, factors needing improvement are IT service performance and information security. To improve the IT service performance it is recommended to use ITIL and IT service management best practices for IT service performance management such as clearly establish performance goals related to the delivery of IT service across all channels (IT service desk, field team, etc.), and communicate them to all key stakeholders, improve visibility into service performance, and more accurately measure progress towards defined objectives and strictly adhere to service level agreements (Samanagecom, 2016). In addition to that, value-based management and balance scorecard approaches can be used to specifically measure the IT service performance in various aspects (Praeg and Schnabel, 2006).

Practice Standard of Good Practice for Information Security to enhance the information security factor. Some of the best practices are enable compliance with major information security related standards and form a basis for policies, standards and procedures (Securityforumorg, 2016).

Interview data are coded using MAXQDA software (Maxqda, 2016) to find out the recommended action to enhance the quality of service delivered and those are categorized according to the impact as high, medium and low. Moreover, resources, financial and knowledge requirements are also analyzed. After coding the interview results a list of recommendations were derived. Those recommendations are listed in Table 4.13. Those recommendations are also prioritized according to the required

resources, financial support and/or knowledge required to implement those recommendations, as well as business impact. Depending on the business impact of the recommendations, they are ranked from low to high impact. If Sri Lankan can implement or carry out below recommendations, it could compete with other international airlines by providing a high quality IT service to the passengers as well as internal departments of the company.

Table 4.13–List of recommendations.

Priority No*	Recommendation	Impact	Resource, Financial , and/or Knowledge Requirement	Common Issue Area
H-1	Notify passengers via SMS • If the flight delay is known in advance, notify passengers about the delay via SMS. • For already delayed flights airline prove hotel facility to certain passengers. In those cases, also send the updates related to next flights and delay status. For this, passengers' mobile numbers are required. While passengers doing online reservations enter their number, offline reservation agents are putting their number instead of customers. Therefore, need to verify and make sure that the passengers' mobile no are insert at the check in	High	Low	Customer satisfaction
H-2	Notify baggage loading status to customer via SMS • Baggage loading: When baggage are loaded to aircraft at the origin (only in Colombo) notify passengers via SMS. o BRS system can send SMS to pax that his/her bag is loaded to the correct flight. As DCS system transfer relevant data to BRS system. That means passenger details with bags. BRS has the data which bags are loaded or not	High	Medium	Customer satisfaction
H-3	Enhance IT services in operationally critical areas • Enhance IT services provided for operationally critical areas such as engineering, flight ops, airport and ramp as they directly deal with core business. o Provide dedicated IT field team to attend faults in those areas. • Provide speedy and reliable Internet facility and PC's and continuously monitors those services.	High	Medium	IT service quality
H-4	Implement IATA self-service fast travel initiatives. • Implement six areas of IATA self-service fast travel initiatives. o Check-in-Already implemented (Automated Kiosk, Web or Mobile)	High	High	Process performance & Customer satisfaction

Priority No*	Recommendation	Impact	Resource, Financial , and/or Knowledge Requirement	Common Issue Area
	○ Bags ready to go - Self-tagging and Fast Baggage Drop off (one counter available). Self-tagging is available now with Kiosk. Adding weight is at the counter. ○ Document check - Only the passport, not the ID cards, Driving licenses ○ Flight rebooking - In case of disruption(Cancellation or delay) ○ Self-boarding ○ Bag recovery			
H-5	Partner with other airlines on IT services ○ Mega carriers and small airlines are working together rather than competing with one another by sharing IT knowledge know how when coupling each other systems.	High	High	Information system quality & Customer satisfaction
M-1	Introduce social media for marketing • Introduce social media (Facebook and Twitter) to advertise and market new airfares, promotions and company updates.	Medium	Low	Customer satisfaction
M-2	Co-operate web site enhancements • Enhancements to co-operate web site: ○ Increase performance by reducing loading time ○ Introduce site Map ○ Introduce web responsive design ○ Multilingual support for major languages ○ Ease of accessibility ○ User friendliness ○ Enable Google analytics to co-operate web site.	Medium	Low	IT service quality & Customer satisfaction
M-3	Enhance online feed-back system	Medium	Low	Information system quality &

Priority No*	Recommendation	Impact	Resource, Financial , and/or Knowledge Requirement	Common Issue Area
	• Enhance (more user friendly and mobile version) SriLankan passenger online feed-back system (as there is a paper version- passenger feed-back forms with magazines are available) • Evaluation categories o Airport services, Inflight services, Post flight services, Point of contact, Comfort			Customer satisfaction
M-4	Develop and enhance bar –consumption monitoring system • Develop and enhance current systems to provide better measurements about items loaded to the flight with the help of CRM system. o E.g., Provide a better bar –consumption monitoring system, so it could reduce the weight of the aircraft and loads with required items (rather than just loading previously load foods and liquor)	Medium	Low	Information system quality, IT service value & Customer satisfaction
M-5	Install CCTV cameras for all the belts • We are being rated as a company that is losing passenger bags or damaging. So to outcompete it they support to install the CCTV cameras for all the belts in arrival and continuously monitor and display monitors of sceneries and provide report when required. o Then passengers are fear to do stealing by seeing the CCTV camera photos captured through large monitors and track the passenger who is doing so intentionally	Medium	Medium	Customer satisfaction
L-1	Provide IT know how and domain knowledge to internal departments • Since company has an idea to expand and capture Maintenance Repair and Overhaul (MRO) business, deploy (either purchase or develop) a MRO system which caters all engineering requirements (Current system has data issues and lot of problems) • So provide IT know how and domain knowledge as well as previous system IT related issues when engineering department required.	Low	Low	Customer satisfaction
L-2	Develop online CD –DVD library system	Low	Low	Information system quality &

Priority No*	Recommendation	Impact	Resource, Financial , and/or Knowledge Requirement	Common Issue Area
	• Now we have the latest IFE systems in our aircrafts and oldest one is built in year 2011. To enhance the customer satisfaction develop online CD –DVD library system for the in-flight services.			Customer satisfaction
L-3	To aware what exactly happening in the market • Competition is everything. Especially in terms of sales. So get the help of IT to be aware of what exactly happening in the market with the competition and to have a good market/business intelligence	Low	Medium	IT service value

* H – high, M – Medium, and L – Low priority

Chapter 5 – Conclusion and Recommendations

This chapter discuss the conclusion and recommendations based on the research findings. Section 5.1describes the evaluation of the research objectives. Section 5.2 presents an analysis of recommendation. Sections 5.3 presents the limitations and future directions respectively.

5. 1 Evaluation of Research Objectives

Based on IT service quality measurement framework by Lepmets et al. (2013) following measurement categories are evaluated; IT service quality, information system quality, customer satisfaction and value of the IT service except process quality and service behavior. Following factors were identified as Favorable:

- IT service quality: IT service availability, IT service capacity, IT service reliability, IT service continuity and IT service utilization
- Information system quality: Availability, reliability and maintainability
- Customer satisfaction: Customer feedback, Customer support
- Value of the IT service: Mutual value creation

Based on the framework it was further identified that the following factors need improvements:

- IT service quality: IT service performance, Information security

After conducting interview based questioner set of recommendations are derived to enhance the IT service delivery to par with or go beyond other international airlines. Second level analysis was done and it is described in Section 5.3. Therefore, this research achieve the objectives that were outlines in Section 1.3. While specific recommendations are discussed next in detail, study also experienced a set of limitations mainly due to lack of relevant data. Those issues are further discussed in subsequent sections.

5. 2 Analysis of Recommendation

Priority No: H-1 – Notify Passengers via SMS

This is a service expectation and most of the airline are providing this service. Passengers prefer to have flight status on their mobile. Preferably, they need SMS notification. Considering global trend 97% of travelers use their mobile while travelling. Out of that 97% more than 60% passengers have smart phones. People prefer to have push notifications (IATA, 2016). Therefore, This concern can be address in three ways:

1. Encourage Sri Lankan Airline's passengers to use SriLankan Airline's mobile app. Because it pops up all flight related information, which is very much important for passengers. Via the app flight delays, flight changes, equipment changes, climate changes and all these information could be notified.
2. The second option is for those who do not have Sri Lankan Airlines mobile app. For them the solution can be Short Message Service (SMS), if passenger mobile numbers are known. Moreover, automated notification about flight delays also can be also sent.
3. Notify flight delays through emails to fly smiles members.

One complexity that company need to address is that the passengers who do reservations through agents. Agents do not pass passengers personal information to the airline. Therefore, request can be made from passengers, that there is online page where they can register for reservations by themselves, if passengers want to get additional preferred services about onboard catering, or may be online notification about SriLankan Airlines services and operations, they can put their PNR and other relevant information and get registered. Those who are doing this will automatically get the notification.

Priority No: H-2–Notify baggage loading status to customer via SMS

If this technical solution is provided passengers do not have to wait until destination to realize whether their baggage is loaded or not. This status could be notified through SMS to passengers. In cases of an unbounded baggage, they could notify the airline

staff to take promptly actions. This solution has a limitation, as all foreign passenger's mobile connections may not be international roaming enabled.

Priority No: H-3– Enhance IT services in operationally critical areas

From IT point of view, Technology can basically help to address this demand, because if company has a proactive service monitoring setup in operational areas, IT team could see whether there is any service disruptions. For example, if network condition in engineering side can be monitored, no one need to be there all the time to attend to issues. From the backend one can see how the engineering network behaves. If there is any network related bottlenecks, rather than waiting until the user finds the issue can be fixed from the back end. This can be done in a very productive manner and without having a dedicated IT team for that.

This is the demand, as the engineering division want an IT service they prefer to have a dedicated IT staff. However, going forward, to optimize the resources in IT, a pool can be created, and enable that pool to work in anywhere. However, for a second-level escalation, such as changing a router or change in an application, can be channeled through the backend engineers. But IT department may not be able to dedicate one staff to an individual division, and expert pool can give a solution.

Therefore, it is recommended that the Network Operation Center, service desk and Data center will proactively monitor the operational issues in Engineering and other key operational areas on a 24×7 basis. A common pool of staff and special attention will be given to engineering and other business critical areas.

IT department should focus on the quality of the service that offer than the number of staff members allocated for various services given that the minimum required number of staff is allocated. Consider Printer cost as against the flight delay cost. For example, flight crew may not get the list of passenger delaying on time departure. For the cost of this single delay, 10 to 15 printers can be bought. Hence, it is more important to reduce service interruptions by having the required level of redundancy. Hence, it is essential to have a reliable and robust setup with sufficient backup. If one printer fails, at least there should be another printer to do the same job. So single point of failure should be minimized. Solutions should be designed in such a way that means almost

zero downtime. SriLankan SAN environment, backend data center environment, all are specifically designed for zero downtime.

Priority No: H-4– Implement IATA self-service fast travel initiatives

SriLankan has initiated IT driven solution to implement IATA standards on Simplifying the Business (STB), where some of the six areas of IATA self-service fast travel initiatives are already implemented while others need to be implemented and/or expanded.

- Check-in-Already implemented (Automated Kiosk, Web or Mobile)–One of that initiative is Self-Service KIOSK. Company has already implemented self-service KIOSK at Katunayake, Paris, Frankfurt, Chennai and two other airports. As a result, SriLankan is able to cut down check in time. Also, it is a customer centric service where company is able to increase the customer satisfaction during their journey. Not only self-check-in service but also company has introduced hand-held checking machines, where the agent can do checking using a tablet. The tablet is attached to a Bluetooth printer. If the passengers are lined up in a queue, the agent can go to the passenger and request the passport and it can be scanned and swiped on the hand-held device and here and there you can make passengers check in. It has also contributed to increase the passenger satisfaction in Colombo Airport.

  These Initiatives have helped the airline to cut down the total cost of passenger handling. Especially in Paris, CDG Airport. The station manager in Paris confirmed that they are in the process of removing one counter saving huge amount of money. About 60% of Paris passengers are now using KIOSK for self-check in. While introducing these services one of the key challenge to address is how to maintain these solutions. Company has to provide 24×7 service. Thus, right now at Colombo Airport self-check in and passport travel checking and all check in mechanisms are being monitored by service desk and our dedicated departure control assistance Staff. This service is to be expanded to other airports. From the services point of view IT department considers this as a mission critical service and hence provided a high monitoring and a critical attention of this service management.

- Bags ready to go (self-tagging and fast baggage drop off)–Recently company implemented self-bag tag option in Colombo whereas already implemented this in Paris three months ago. So now, the passengers do not need to go to counters to tag bags, as it is provided with KIOSK. So now Self-tagging is available with kiosk but adding weight is at the counter.
- Document Checking – This is also provided with the check in. Because passenger can swipe their passport in kiosk machine, they can get advance passenger information. That information is captured in the departure control system and then they can see whether this passenger has all the passport compliances. However, currently SriLankan do not have ID and Driving license scanners. If company has a national-wide, global digitalization or unique identification, IT can implement them in self-service options.
- Flight Rebooking – Currently sales and rebooking are not allowed with kiosk. These features are already available in mobile app and online app. The features like Flight rebooking, flight changes cancellations are enabled in mobile app and online check in. This is called Manage Your Booking. Going forward, passengers may prefer to use their mobile for reservation, date changes and even for bordering than kiosks. Therefore, the "Mobile Bordering Card" is necessary at Colombo Airport. Once it is implemented company can cover the full passenger journey.
- Bag recovery – Bag recovery can be a feature in mobile app where it can alert passengers on bag status. If SriLankan want to get any disruption or the mishandling of a baggage such notification can be push to the passenger's mobile.
- Self-boarding – Systems are ready for mobile boarding card but not authorized yet by immigration and airport authority.

Priority No: H-5–Partner with other airlines on IT services

This is about Alliances. The classic example is "One World Alliance. As a member, the company has one world alliance membership with key airlines like American and British Airways. Generally, it is a win-win situation. So being a member of one world alliance, company can support the alliance activities in this region. Those who are

having loyalty membership in other airlines can get the benefits from SriLankan Airlines Loyalty management program. It could happen in vice versa as well.

IT could help here while integrating with other systems in One World Alliance, where company developed a common data hub. Common data hub is connecting SriLankan Airlines Frequent Flyer Program (FFP) database into OneWorld common data hub. For example, a fly-smiles member could redeem any services from American Airlines when he/she is travelling to Los Angeles. Such integrations enable many such benefits to passengers while increasing the loyalty to the airline.

If company knows better than its competitor, company can be at least one-step ahead. If the company can track the competitor activities and can track the global traveler's profiles, it is in a better position to do their marketing. Therefore, when planning the next summer marketing by now, if company knows the potential travelers who visits this part of the world, it can easily tap them and introduce Sri Lanka. Therefore, that company can get that passenger base to Sri Lanka from transit points like Doha and Dubai. Likewise, company can do strategic and tactical marketing by using a comprehensive database of passengers. This is where the CRM also involve. However, even with or without CRM, if you know the passenger profile of this part of the world that will be beneficial.

Priority No: M-1– Introduce social media for marketing

Social Media has become a world trend now. How airline should use social media is mainly comes under marketing. It means whenever you get a special offer or a promotion during any season social media should talk about it. Especially the younger generation travels together as a group. Hence, spread of such messages is very important to attract a larger customer base.

So if company can incorporate SriLankan Airlines IBE in Social media like Facebook, Twitter, that is always better. Simply it says if anyone log into a Social media he or she should be able to do a booking through that account rather than visiting again to the SriLankan website. Some airlines have already stared this procedure and for that, all the redirections and navigations should happen with in the social media. Moreover,

the company has to make flight availability, flight charts and display and all booking related information should be there in the social media. If there is every information, more interaction will be there. More interactions lead to more bookings. It is clear that social media should be a part of sales channels and company has to capitalize on it. Hence, SriLankan need to make sure www.srilankan.com's booking engine is available for bookings through Facebook Twitter.

IATA has predicted that next two to four years the passenger growth will be increased in this part of the world (IATA, 2016). Therefore, you could see many travelers in Asia pacific, China, Singapore and India. SriLankan can benefit from this opportunity. Competitively company has lot of advantages, strategically it is also advantageous, and tactically you can do lots of marketing using social media.

Priority No: M-2– Co-operate web site enhancements

Company's main focus is to improve sales channels. Especially in the airline sector web is the most powerful tool. Most important things is, if company increases direct sales that will definitely reduce GDS cost. GDS cost is a one of major cost component in airline structure. GDS cost means backend cost that company pay for inventory holders like ABACUS, AMADEUS, and GALELIO. More the company improve direct sales more revenue or more yield that comes to the airline. This is strategically very important aspect that is considered by SriLankan IT as well. Recently IT department has took the responsibility for in house development of SriLankan website. Consequently, the company is now more focused than ever before. So most important is how IT should improve the performance of Srilankan.com loading time. For that, IT team has initiated an infrastructure solution empowered with a Content Delivery Network (CDN).So even though company main site is located in Colombo, IT department will be setting up mirror sites in Singapore, America, Europe and all these continents. Hence, the visitors who are coming from those areas will get a richer experience. IT department is also in the process of introducing multi-lingual support. Based on Google altitudes, IT department has identified that most visitors come from Sri Lanka, India, far and middle east. Hence, the company cannot support English as

the only language. Currently company is already supporting Chinese, French and Arabic. Introduce Sinhala and Tamil language also to support to co-operate website. To select the language there should be mechanisms, e.g., show county flag aside.

Another important fact is the product will become no use if it is not user friendly. Therefore, a user-friendly design is necessary. That is the very reason why company is worrying about certain navigations. The entire website is to be revamped with the new structure, identifying industry best technology to do transaction and simplified navigation.

Company has also taken lots of feedback from visitors where they can find the difficulties in making transactions. Many questions are being asked from the visitors and now incorporating them in the new revamping project.

Another thing is look to book ratio in srilankan.com. If you analysis the look-to-book ratio, there are lots of looks but only a few bookings. This means either customer visit SriLankan web only to see the prices but they do not do any ticketing through the Web. It is important to identify the reason. Perhaps most of them would have attempted to do the booking but bookings were failed due to whatever the reason. Therefore, that has to be investigated. The other thing is if you look at from the regional point of view, in Sri Lankan and Indian customers visit the website to get current information (new fares) and they are not actually travelers. There is a percentage of that kind of visitors but SriLankan is in par with the industry standards when it comes to look-to-book ratio.

So the web site should be intelligent enough to understand who is checking the web site and for what purpose. For example, if you see a large number of look-ups from India during the Diwali season, company has to identify whether there is a real need for them. Then customize the approach and as well as give better offers to those customers during the season.

Another aspect is the web presence of SriLankan Airlines. Take Emirates for example. They have published their web site everywhere in the world. Even in a cricket match, you can see their website published. Because that is the number one single point of contact for their airline. So similar to that srilankan.com should be a very popular web

site within the travel community. This could be achieved through better web presence coupled with better marketing and e-commerce. What IT can provide is the technological support, the design, and the product concept, but commercial and the marketing division should concern about the web promotion.

Company has the tools but question is are company really getting the maximum use of them. While most tools are there it seems company is not using them effectively. Although UL is not flying to certain destinations, since company is an OneWorld member, all the destination should available in co-operate website. For example, LON-MAA and CMB-VIE are not available for reservation. That is a competitive dis-advantage in SriLankan website compared to Emirates and Qatar airlines who provide this.

Priority No: M-3– Enhance online feedback system

This is very important. Why SriLankan should take feedback from customer, because they know about the airlines better than anyone does. Company has to understand what their views are. So wherever make customer touch point, company should be able to get their feedback. So if you look at SriLankan or travel map of any other airline they interact with customers in many other phases, at the time of doing booking, check in, on-board after departure if they want to get frequent flyer mileage, then they will definitely interact with the airline. Therefore, whenever they interact with the airline, company should be able to place whatever the mechanism to get their feedback.

Previously feedback was collated only using paper-based forms, now both online and paper based options are available. The most important thing what SriLankan IT has done is not only getting customer feedback but also recovery the effect that customer had. Suppose if you have seen a kiosk next to your counter displaying rate our service good or bad may be very bad or may be excellent. The moment you say very bad SMS should generate and send to the duty manager there saying that so and so rated your ticket office services are very bad. Therefore, duty manager can talk with that passenger if available and apologize. It is called customer or passenger recovery. Still company Electronic Customer Outlook has a privilege to pass that message to onboard person saying that this passenger has rated SriLankan Airline services as very bad

please do recover this passenger. Therefore, if you are on board cabin manager or the purser can come and apologize or give you some special service.

Priority No: M-4–Develop and enhance bar –consumption monitoring system

Currently, items loaded to the flights are not well planned. How technology can serve this issue is recommend that the Customer Relationship Management is No1. Because if flight-crew knows them, and their preferences, they can load their preferences well in advance, then the customers do not need to request anything but the airline should be ready enough of to accommodate the preferences through the CRM, without disappointing the passengers onboard.

But even if company do not have a sophisticated CRM, also can do a successful booking or ticketing, airline should be getting engage with the passenger or send an email or notification of request for pre-ordering meal with an extra fare .This will also increase upselling opportunities.

This increases the customer satisfaction towards the airline while increasing up selling opportunities. Hence, the Recommendation is technology can use to communicate with passengers to inform about pre-orders or special orders to improve up selling opportunities.

Another important fact is if SriLankan can load only the required amount of food and beverage actually company can save the cost. Because some people on-board they do not eat, rather than carrying unnecessary load, if company knows what they really want on board, can cut down this meal wastage and weight.

Priority No: M-5–Install CCTV cameras for all the belts

Damaging or mishandling baggage will critically is about the reputation of SriLankan Airlines. So the reputation can be damaged if you do a lot of mishandling of baggage.

Any of Airline in the industry face this challenge. Because sometimes there's nothing to do with the airline, something beyond their control these could be occur while transferring baggage from one place to another. How technology can support here is again by giving some monitoring mention in recommendation like CCTV cameras.

When it comes to CCTV cameras, recently introduced cameras with" intelligent video recording "feature. The company can use these cameras to handle baggage as everything can be recorded by them and can be visible to passengers if they requested. In most of the airports these services are welcomed.

Priority No: L-1– Provide IT know how and domain knowledge to internal departments

IT department is not that big to develop MRO system to this airline. Company anyway find a package solution to that. However, there also company has big value addition. Here rather going for a new application, can identify what is really need (requirement). Have company optimized the use of existing application and that is also a question to be. Company still using only 70% of AURA capabilities. It is not the product that has lot of issues it is the process that has not align with the product. For example, AURA has a template to populate aircraft components and staff. Even for new aircraft people do not use AURA to gather that. It is about technology adoption. Sri Lankan IT can add this whole domain IT expertise to engineering saying that if you can make use of AURA whatever the requisition allocation, inventory management, whatever the modules then you can see a huge improvement or the traceability of your components. There is a bit of argument saying that company wait until the last moment to order aircraft equipment. By doing this company is incurring high expense. So need enterprise planning solution. That means an ERP solution for MRO. Company maximize the use of AURA is a question. How best company can address them with a new version or new system like AMAOS, SOTRACKS. That again company has to evaluate and see. Is company processes are ready to align with new system? That is a whole transformation process that needs to carry out. Normally that sort of exercise will take 2 years. In this you have to transfer data, map the processes and put up a new system.

Priority No: L-2– Develop online CD –DVD library system

There are standard things like that IFE, which is called Media Kiosk. Now media kiosk is nothing but it is a machine, which decimates which broadcasts all popular movies, new telecasts everything. Some airlines are now in the process of setting up those

media kiosk in their languages. Assume business class passenger and he carries an iPad. Passengers can get connected to the media kiosk online with a very strong bandwidth. If passenger is intersected he can download most recent block busters and movies on to his i-pad since he is waiting for the aircraft. That is given in addition to what you get in the aircraft. Passengers can download those in to their iPad and it is available in most of the airlines. Going forward, there are some media broad casters onboard which is called the servers, you can broadcast media on to your personnel devices. During that flight, it will be broadcasted. Therefore, when you are on board, you can either switch on to your normal video channel or you are really go to that thing and you can request it. Copyright is enabled for downloaded movies and songs otherwise, they can watch those in anywhere else also.

Priority No: L-3– To aware what exactly happening in the market

It is important to know the customer base. For example, in winter and peak period, company do not know whether it is filled capacity adequate, if company had filled capacity, has filled capacity with most optimum yield which could collect that is also something which company do not know. This kind of high-level good information can be made available to decision makers or senior people. For example, if Narita flight is fully booked, is company reach the breakeven point? Is company running this flight in a profitable manner? Those things you have to find it in very generous way. Therefore, BI is number one requirement. That is why company has started, once company won an award for CIMA 2010 annual award, why company won this annual award. Unblocking BI award Sri Lanka Airlines, commend by CIMA. IT department did that, since company wanted to make big hype in BI. Need to make a BI team in IT, who can make very dynamic and innovative results which showcase where company do not perform, where do not capitalize.

Commercial department says they are very much empowered with the tools and subscribe for everything that is required. However, the problem is still that has not affected to company bottom line. Sometimes still IT department found there are some lost opportunities. To check whether the company is on track, IT can provide trend analysis for other user departments and IT can show case history and current information to senior management to take decisions.

5. 3 Limitation and Future Work

5.3.1 Limitations

Although IT service quality measurement framework consists of six common issue areas, only four out of those six were evaluated, as the data was not available. According to the company goals and objectives, those areas are not relevant to the IT department. Even for the four areas considered many data and KPIs were lacking. Hence, this study make conclusions only in light of the available data. Moreover, variety, experience and experience in the roles of interviewees might have provided different perspectives to the responses.

5.3.2 Future Directions

Following are suggested as future research:

- For a more comprehensive assessment is it recommend collecting some of the key data and KPIs that are missing and then reevaluate the IT service quality of SriLankan Airlines in the presence of additional data.
- IT service quality was measured using IT service quality measurement framework which is currently in the third iteration. In the next iteration, authors plan to evaluate the framework in terms of utility and particular focus will be set on finding out the reasons why some measures of the framework are not collected. Hence, this research study is suggested to be continued with the new iterations of the framework.
- The alignment the business goals and the IT service quality measurement objectives in industry could be studied and that could provide additional support to the usage of the measurement framework.
- Another potential area of research is the close follow up on how the proposed recommendations were implemented, to what extents, and difficulties experienced in the process and reevaluate the IT service quality and its impact to overall airline service quality.

REFERENCES

Airlineratings, (2016). Airline quality rating. Retrieved 7 April, 2016, from www.airlineratings.com

Askprocesscom. (2016). Askprocesscom. Retrieved 8 April, 2016, from http://www.askprocess.com/resources/articles/CMCrossroads/0610ITILQualityService.html

Ates S.S., and Kagniciolu C.H, (2013). Airline Service Process at Ataturk Airport: An Analysis of the Current Situation. International Journal of Business, Humanities and Techno, 3(6)

Bazargan, M. (2004). Airline Operations and Scheduling. Hampshire: Ashgate,

Chen I.J., Gupta, A., and Rom. W., (1994) "A Study of Price and Quality in Service Operations", International Journal of Service Industry Management, 5(2), 23-33

Chan, D. (2000b), "Beyond Singapore girl – grand and product/service differentiation strategies in the new millennium", Journal of Management Development, Vol. 19 No. 6, pp. 515-42.

Crosby, P.B. (1979), Quality Is Free: The Art of Making Quality Certain, New American Library, New York, NY.

DeMoranville, C.W., and Bienstock. C. C., (2003). Question order effects in measuring service quality. International Journal of Research in Marketing, 20 217-231.

Diederiks, I., .H & Butler, M.A. (2006). an introduction to air law. Alphen and den Rijn: Kluwer Law International

Eurocontrol. (2011a). Network Manager Annual Network Operations Report, Bürüksel: Eurocontrol.

Feigenbaum, A.V. (1951), Quality Control: Principles, Practice and Administration, McGraw-Hill, New York, NY.

Flightstatscom. (2016). FlightStats. Retrieved 7 April, 2016, from http://www.flightstats.com/

Frost, F.A., and Kumar, M., (2001) "Service quality between internal customers and internal suppliers in an international airline" International Journal of Quality & Reliability Management, 18(4), 371-386.

Gronroos, C. (1978), "A service oriented approach to marketing of services", European Journal of Marketing, Vol. 12 No. 8, pp. 588-601.

Gursoy, D., Chen, M.H., and Kim H. J., (2005)" The US airlines relative positioning based on attributes of service quality, Tourism Management, 26(1), 57-67

Hoffman, K. D., Bateson, John, E. G., (2001). Essentials of services marketing: concepts, strategies, & cases. (2nd Ed.). South-Western:Thomson Learning,(Chapter 12-13).

IATA. (2009). Dangerous Goods Regulations. Geneva: IATA publications.

IATA. (2011b). Airport Handling Manual. Geneva: IATA Publication.

Iata. (2016). Iataorg. Retrieved 22 April, 2016, from http://www.iata.org/whatwedo/passenger/fast-travel/Pages/index.aspx

Jia, R., & Reich, B. H., (2011). IT service climate—an essential managerial tool to improve client satisfaction with IT service quality. Information Systems Management, 28(2), 174–179.

Johnston, R., (1995) "The determinants of service quality: satisfiers and dissatisfiers", International Journal of Service Industry Management, 6 (5), 53-71

Juran, J.M., Gryna, F. and Bingham, R.S. (1974), Quality Control Handbook, McGraw-Hill, New York, NY.

Kasper, H., Van, H. P., and De Vries, V. (1999), Services Marketing Management, John Wiley & Sons, New York, NY.

Lovelock, C. H., Wright, L. K., (1999). Principles of service marketing and management. New Jersey:Prentice-Hall,(Chapter 5).

Marion Lepmets et al. (2013). The Evaluation of the IT Service Quality Measurement Framework in Industry. Dundalk Institute of Technology.

Maxqda. (2016). the Art of Data Analysis. Retrieved 22 April, 2016, from http://www.maxqda.com/

Parast, M. M., and Fini E.H., (2010) "The effect of productivity and quality on profitability in US airline industry: An empirical investigation", Managing Service Quality, 20 (5), 458-474

Parasuraman, A., Berry, L.L. and Zeithaml, V.A. (1985), "A conceptual model of service quality and its implications for future research", Journal of Marketing, Vol. 49, autumn, pp. 41-50.

Parasuraman, A., Berry, L.L. and Zeithaml, V.A. (1988), "SERVQUAL: a multiple-item scale for measuring consumer perceptions of service quality", Journal of Retailing, Vol. 4 No. 1, pp. 12-37.

Parasuraman, A., Zeithaml, V.A., & Berry, L.L. (1991). Refinement and reassessment of the SERVQUAL scale.Journal of Retailing. 64(4), 420-450.

Polter, S., Verheijen, T., & van S. L., (2008). ISO/IEC 20000—an introduction (First Edition, ITSM Library). Zaltbommel: VanHaren Publishing.

Praeg, C.L.A.U.S.-.P & Schnabel, U.L.R.I.C.H. (2006). IT-Service Cachet – Managing IT-service performance and IT-service quality. Proceedings of the 39th Hawaii International Conference on System Sciences:

Rhoades, D. L., and Waguespack, B., (1999) "Better safe than service? The relationship between service and safety quality in the US airline industry", Managing Service Quality, 9(6), 396-401

Rhoades D. L., Waguespack J, B., and Young, S., (2000) "Developing a quality index for US airports", Managing Service Quality, 10(4), 257- 262

Robledo, M.A., (2001),"Measuring and managing service quality: integrating customer expectations", Managing Service Quality, 11(1) 22-31

Rhoades D., and Waguespack B, (2004), "Service and safety quality in US airlines: pre- and post-September 11th", Managing Service Quality, 14 (4), 307-316

Rhoades D. L., and Waguespack J, B., (2000) " Service quality in the US airline industry: Variations in performance within airlines and between airlines and the industry", Journal of Air Transport Management, 5(1), 60-77

Samanagecom. (2016). The Value of Service Performance Management. [Weblog]. Retrieved 17 May 2016, from https://blog.samanage.com/it-service-management/the-value-of-service-performance-management/

Securityforumorg. (2016). Information Security Forum. Retrieved 17 May, 2016, from https://www.securityforum.org/tool/the-standard-of-good-practice-for-information-security/

SKYTRAX, (2016). Retrieved 7 April, 2016, from www.airlinequality.com

Slidesharenet. (2016). Slidesharenet. Retrieved 21 April, 2016, from http://www.slideshare.net/cripoll/flower-of-service-in-a-restaurant

Srilankan Airlines Ltd, (2016). Organization chart. Retrieved 18 April, 2016, from www.home.srilankan.com

Stevens, P., Knutson, B., & Patton, M. (1995). A tool for measuring service quality in restaurants. Cornell Hotel and Restaurant Administration Quarterly, 36(2), 56 A tool: 10.1016/0010-8804(95)93844-K, http://dx.doi.org/10.1016/0010-8804 (95)93844-K

Tiernan S., Rhoades D., and Waguespack B, (2008),"Airline alliance service quality performance-An analysis of US and EU member airlines", Journal of Air Transport Management, 14(2), 99-102

Tsaur, S.H., Chang, T.Y., and Chang, H.Y., (2002),"The evaluation of airline service quality by fuzzy MCDM", Tourism Management, 23(2), 107-115

Janawade V. (2012). Consumer perceptions of service quality of complex services: An application to airline alliances. Paul Cezanne University, France, 5(4),

Wen, C.H., and Lai, S.C., (2010) "Latent class models of international air carrier choice", Transportation Research Part E 46, 211–221.

APPENDIX A – Questioner List

1. Should SriLankan Airlines be concerned about the competition?
    a. If Yes – Why?
    b. If No – Why?
2. Should SriLankan compete or even outcompete the competition?
    a. If Yes
        I. In, what areas should we compete & why (or what are the areas to target)?
        ii. What are the actions/steps we have taken so far to compete?
        iii. What other ideas/actions/steps do you think we should consider & why?
        iv. What kind of the role do you believe IT can/should play in these?
        v. What challenges do you think we may face while competing or trying out these ideas?
    b. If No
        I. Why do you believe we don't need to compete?
        ii. Then, how can we at least retain where we are today?
3. What is your envision for SriLankan in future? Where do you would like Sri Lankan to be in another 3 – 5 years' time?