



How New Unbundled Ancillary Services and  
Rewarding Programme Benefit  
Cathay Pacific Airways (CX) and its Customers?



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## **Abstract**

Cathay Pacific Group recorded an attributable profit of HK\$14,048 million for 2010 though a sharp rebound. This compares to a loss of HK\$8,696 million in 2008 due to financial tsunami, oil price spike (AFP, 2008), and severe competition etc. Rapid turnarounds from the lows to the record highs also indicate the volatile nature of airline business. The results would be adversely affected very quickly by a return to recessionary economic conditions, it is necessary to manage the finances prudently. Various approaches are proposed to fill the profit gap, such as providing add-on revenue streams, offering low fares (Timothy, 2000), etc. However, offering differentiated ancillary services (Ritesh, 2009) may be a cost effective way.

Providing ancillary services are firstly invented by low-cost carriers contrast to the bundled service. The passengers can freely select their preferred ancillary services with extra fees. However, as a reputed traditional airline, CX is unacceptable to the tradeoff between extra revenue and the quality of existing services. Accessing the customers' preference on the trading-off between the unnecessary ancillary services and rewards becomes vital for saving cost, generating ancillary revenue, enhancing customer loyalty and increasing customer satisfaction. For the sake of originating comments about the new, unbundled and customized ancillary services and the new rewarding programme, the research study was undergone.

As the win-win situation can be achieved, it should be a good candidate for the adoption. The current research study would be dedicated on determining whether and how to implement the ancillary services with the statistical means obtained from the survey conducted. By the reference to the three models for the user satisfaction, namely Kano, SERVQUAL and IPA, the conducted research evaluates the current and the potential services to be provided with the support of the data from the survey conducted. The suggestion and recommendation are provided to CX for the further consideration.

Finally, the research report also include a hypothesis to evaluate the degree of trustfulness for the customers to provide answer in the survey and figures out how to increase the trustfulness in the survey as the result showed that the customers are not tend to provide their true felling if they are not triggered by interest or reward.

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# **1. Background and Introduction**

In this chapter, the introduction of the report and the background information of the aviation industry, ancillary services and frequent flyer programme are included.

## **1.1 Aim**

The aim of this project is to introduce the new unbundled ancillary services and modified rewarding programme aiming to enhance the competitiveness of Cathay Pacific Airways (CX), in terms of enhancing customer loyalty, maximizing customer satisfactions and generating ancillary revenue by referencing to the three models Kano, SERVQUAL and IPA with the acquired customers' preference.

## **1.2 Objectives**

To achieve the aim of the project, the following procedures would be conducted:

- a. Explore the reasons of changes and the existing solutions.
- b. Evaluate the importance and the difficulties of unbundling ancillary services.
- c. Identify, prioritize and categorize the customer needs on ancillary services with Kano model of customer satisfaction.
- d. Investigate the discrepancy between the customer expectations and perceptions of ancillary services by using SERVQUAL Model with its instruments and perceptions along quality dimensions.
- e. Access the customers' needs and desires on ancillary services with Importance-Performance Analysis by finding out about what customers think about importance and performance on attributes of ancillary service.
- f. Identify potential ancillary services to be reinforced and introduced.
- g. Provide pragmatic suggestions to CX on unbundling ancillary services and modifying rewarding programme.

### 1.3 Background

Before 1990s', airlines industry was the highly regulated and protected industry, most of the airlines also protected by their local government in various degrees. The traditional network carriers or full services airlines began to differentiate their services with more and more ancillary services because of the inaccessibility of ticket price information, low competition in the market, political factors and lack of alternative. Those factors also enhance price competitiveness, help collecting marketing data, increase transparency of customer perceptions and boost brand loyalty with frequent flyer programme (Doganis, 2003).

According to Fuerderer et al, rationales of optimal price bundling is to increase profit margin by reducing the transaction cost (Coase, 1960; Demsetz, 1968), savings in the production costs (Fuerderer et al., 1998; Ringbeck et al., 1998), economies of the scale (Paroush/Peles, 1981), extension of the monopoly power (Burstein, 1960) and introducing switching cost to gain market shares (Fuerderer, Herrmann, & Wuebker, 1999).

After the 911 in 2001, the outbreak of SARS in 2003 and financial tsunami in 2008, the profitability is decreasing (Airbus, 2009); (Boeing, 2009). For the sake of survive, CX has no option but reducing the operational cost and introducing new revenues. On the other hand, the attractiveness of Frequent Flyer Programs (FFP) is diminished, and it is no help to maintain the customers' loyalty because of the lack of substantial benefits, so new customer rewarding schemes accomplished with the tailor-made ancillary services should be introduced to suit the market needs (Centre for Asia Pacific Aviation, 2009).

Running an airline with profit is a difficult business mission. By the nature of the industry, airlines are highly capital-intensive, labour-intensive, affected by seasonal demand, fossil-fuel dependent, influenced by national politics and weather vulnerable (Stephen, 2007). With competition for the industry, CX, with their traditional and historical name, is the right time starting to look at trends of the new business model which is dominated by the tailor-made of selectable ancillary service to their passengers, in order to maintain the long-term sustainability and the competitive edge.



## 1.4 Introduction

Ancillary Services bring revenue beyond the tickets sales or support the passenger revenue (Chiu, 2006). Furthermore, Idea Works proposes a broader definition to include revenues generated from frequent flyer activities as it is proven that high revenue had been generated from miles or points sold to banks, travel partners and retailers. According to the successful experience of the low cost carriers, the market segments had been increased to growth in air traveling, sightseeing, visiting friends and relatives (VFRs), studying abroad or find jobs. (Oman, 2011)

Unbundled services become more popular nowadays. Only the people with low information level are willing to pay a higher price to secure their received services (Gaeth, 1991). (Yadav, 1993) examine the transaction value of a bundle with a focus on the customer perception of savings in a bundle price. (Lynn, Wilson, Allen, Weiss, & J., 1990) provide some market conditions, which favor unbundling, as potentially higher margins for unbundled systems which stem from a reduced price elasticity of the single components may prevail. Lists of the ancillary services being used by LCCs and Network Carriers (NCs) are shown in Appendix I.

As a full services airline, adoption of low cost strategies may do harm to the competitive edge (Connell & Williams, 2005). The consumer grievances would damage the reputation. Also, companies offering superior service were able to charge 8% higher for their products and services (Gale, 1992). However, the development of ancillary revenue will be the standard for airlines industry in the future. Therefore, research effort should be devoted to unbundle ancillary service for increasing the customer satisfaction while generating ancillary revenue.

### 1.4.1 Customer Satisfaction Models

According to the Kano model (Kano, Nobuhiku, Fumio, & Shinichi, 1984), there is weak relation between the fulfilment of the individual service and the customer satisfaction. Hence, CX should focus on development of profitable ancillary service, keeps on fulfilling all basic needs, and be competitive with regard to attractive needs (Gilbert & Wong, 2003).

To gain the customer perceptions, it is necessary to evaluate the level of satisfactory and identify the alternation of customers' needs. A service quality framework, SERVQUAL Dimension (Zeithaml, Parasuraman, & Berry, 1990) will be used to define customers'

evaluation of quality as a function of the gap (difference) between expected ancillary services and perceived ancillary services.

Importance-Performance Analysis, IPA (Martilla & James, 1977) is another tool for accessing the customers' needs and desires. By finding out about what customers think about importance and performance on attributes of ancillary service, it is reasonable to think that one can come to some reasonable conclusions about modifying performance on attributes to, for instance, increase profit or customer satisfaction effectively.

As Kano model focusing on identify, categorize and prioritize the customer needs, while SERVQUAL model assumes a linear relationship between customer satisfaction and service attribute performance, both models will be integrated to characterize the customer need relationship and hence the better allocation for the resource.

Based on the evidences from optimal price bundling to maximize the profit and capture more market share but there are many successful records of unbundled strategy for LCCs, rationales of bundling and unbundling of ancillary services will be discussed. Finally, expected difficulties will be discussed and solutions will be suggested.

#### **1.4.2 Summary and Report Organization**

In the aviation industry with full of uncertainty and competitors, adding the ancillary services would boost the competitiveness. However, not all new ancillary services are cost effective. As a result, comprehensive study on the potential ancillary services and the flexibility investigation on the services would be conducted with the support of the qualitative and quantitative surveys.

Various customer satisfactions models, such as Kano categories, SERVQUAL dimension, IPA etc., would be adopted in this project, and the framework would be utilized to figure out the feasible services to be included for the sake of providing enjoyable journey.

Due to the scope of project as well as the limited resource, the analysis between the two classes are selected, namely, leisure traveller and business traveller, as they are different in the reason of taking the flight as well as requirement on the aviation service, while the difference are well documented in the existing literatures (Anthony, 2002); (Nordic Business Report,

2003). Furthermore, the selected categorization of the customer classes also fits the objective of the CX on the improvement of customer satisfaction as the two different groups of passengers are with the significant and fundamental difference on the needs of service. On the other hand, the remaining classifications for the analysis, such as gender, monthly income, education level, etc. provides less implication and with less significance on the different of the service requirement, so the analysis in this report would concentrate on the leisure traveller and business traveller, and the other items would be diminished in the following chapters.

The skeleton of each chapter would be provided, including the introduction chapter, which have overviewed the current situation of CX in the competitive market and the motivation of the inclusion of the ancillary service, six chapters are included in the project, namely, Introduction, Literature Review, Research Methodology, Data Presentation and Findings, Analysis and Evaluation, Recommendations and Conclusion, References and the Appendix.

In the second chapter, which is with the title of Literature Review is presented. The current situation and the corresponding solutions are proposed for the minimized and intensive market for the airline service provisions. Also, the difficulties of the industry would be presented and justification for the implementation of the ancillary services would be provided.

In the third chapter, which is Research Methodology, the models like Kano model, SERVQUAL Dimension and IPA are adopted in the project for the evaluation of the user satisfaction would be briefly introduced. The calculation and the adoption of the methods would be also included in the chapter.

Then, the survey data are presented in chapter four, which is named Data Presentation and Findings and the related analysis in chapter 5, which is titled Analysis and Evaluation. Aided by the research instrument, which is the survey attached in Appendix IV, the survey has been conducted and with the result to obtain the implication for the most feasible ancillary services to be include for the airline.

Finally, Recommendations and Conclusion is provided in chapter 6. Suggestions would be provided to CX on the proposed ancillary services and the implementation strategy, while conclusion would summarize the findings and achievements. Potential limitations and future study would also be given at the end. The Reference and Appendix would be provided in latter parts of the report.

## **2. Literature Review**

The travel industry has been affected by the economic downturn since 2008, and the most serious areas were airlines and the hotels.

### **2.1 Reasons for changes**

To back up the rationale of changes, the current situation of the air-transportation industry and the current position of CX have been analysed.

#### **2.1.1 Uncertain Economic Outlook**

Although Asian carriers, including CX, have benefited from the rapid economic growth in the region and bounced back from their worst times, the world economy is still indeterminate and shaky. CX has recorded 37.7% rise of its turnover during the year of 2010 after unexpected high rate of economic rebound. However, IATA cut its forecast to US\$2.1 billion from US\$3.7 billion (IATA, 2010) due to rising oil price and major natural disaster all over the world in 2011.

For instance, Portugal has just requested financial assistance from the European Union while the States' QE3 is underway (Steinberg, 2011). The nuclear crisis that is happening in Japan has also sapped travel demand. With those uncertainties still going on, there is no guarantee that the global financial environment would not be hammered one more time. In fact, a double dip recession is expected by many economists.

The 2011 has been a year of instability. Food prices are skyrocketing across the world, wars and revolutions are happening in Africa and The Middle East, inflation rates are getting higher and higher in the Asian region, historical low interest rate is being implemented, more and more European countries are seeking financial aids and Japan has just experienced its most severe earthquake and tsunami in history. These incidents have made the airline industry even more challenging.

Passenger load factors of CX is slipping from high and becoming unpredictable. Overcapacity of long haul markets was becoming a serious problem as it creates strong downward pressure on average fares and yield.

### 2.1.2 Rising operating cost

The airline industry is closely related to the price of jet fuel. Fuel costs typically contribute 25% to 35% of airlines' operating costs. It is worthy to note that every US\$1 increase in the price of Brent crude adds US\$1.6 billion to industry cost (IATA, 2010)

Alternative powers like bio-diesel, ethanol, or battery power are available for cars. However, aircrafts can only depend on fossil fuels currently. Bio-fuels offer the most promising alternative to traditional fossil fuels aviation use, but it is expected that this product would account for 30% of all commercial aviation jet fuel by 2030 (Airbus, 2011).

Although the price of oil had dropped from the record peak of US\$145 a barrel it reached in July 2008 to US\$30 in December, 2008, it has been hiking up again since then.

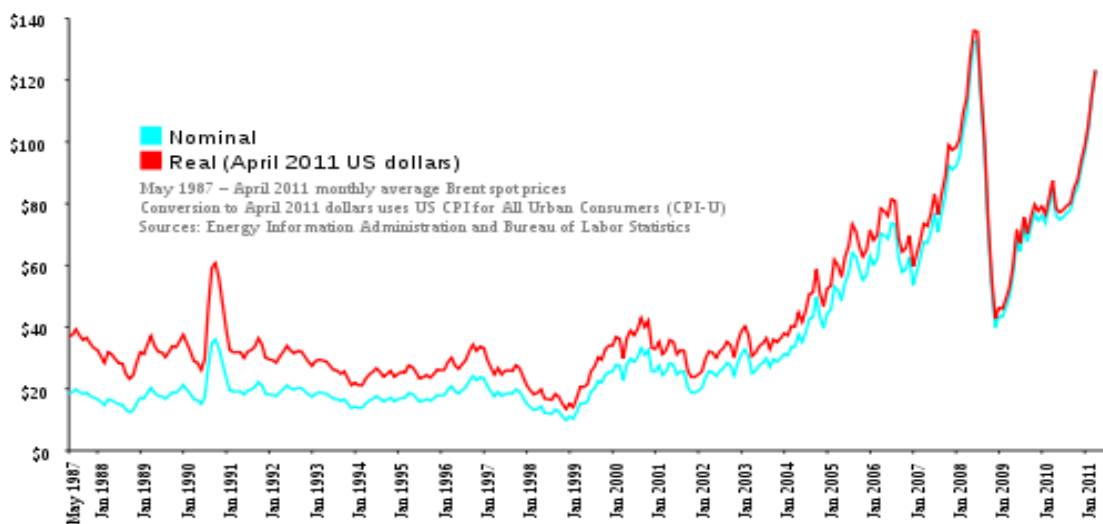


Figure 1: Price of Crude Oil over the Last 14 Years (Oil Price dot Net, 2011)

Despite the fact that CX had record earnings and revenue last year, fuel remains its largest single cost, representing 35.6% of the Group's total operation costs. To managing the risk associated with fuel price changes, CX's fuel hedging activities has reported huge loss in 2010 and 2008 compared with HK\$2 million gained in 2009 (Cathay Pacific, 2010). Christopher Pratt, the CX chairman, said at a briefing announcing the company's 2010 earnings that the recent spike in oil prices following instability in the Middle East could easily hurt its performance in 2011, echoing worries expressed by other international carriers in March 2011 (Yip, 2011); (Wassener, 2011).

Except exceptional high fuel price, the labour intensive tasks and the constraint of wage agreement backed by a solid labour union force also contribute to the expensive operations (Stephen, 2007).

### **2.1.3 Tight competition between airlines**

Due to the trend of open sky policy and deregulations, the threat from the traditional Network Carriers and the emerging LCCs, the competitiveness of airline industry is intensive (Morrell, 2005)

Globally, first and business-class passenger traffic rose 9.2% in 2010, according to the International Air Transport Association. The once quiet market has become prosperous again (Button & Ison, 2009). Network Carriers have, thus, started to offer their best to these premium passengers trying to fetch up as much share in this market as possible (Morrell, 2007)

Singapore Airlines (SIA) owns regional carrier Silk Air and has a stake in Singapore-based budget carrier Tiger Airways. On 25 May 2011, SIA has announced that it will set up a low-fare airline operating wide-body aircraft on medium and long-haul routes within the next 12 months to capture the growing demand among consumers for low-fare long haul travel and try to seeing a new market segment being created as it is proven that low-fare airlines help stimulate demand for travel (Singapore Airlines, 2011).

Regionally, CX faces more competition from within China and Hong Kong, where it gets about half of sales. According to “ CAAC Guidelines on Deepening the Civil Aviation Reform’, 9 CAAC controlled airlines were consolidate into 3 airline groups and it also further eases regulations to control air ticket prices in 2007 (Liu A. , 2010). Hong Kong Airlines, backed by the government of China’s Hainan province, agreed in March, 2011 to buy 38 twin-aisle Boeing planes to boost its network (Wong A. , 2006).

To maintain the continuous competitiveness for the hub in Hong Kong, the expansion of the third runway for Hong Kong International Airport (HKIA) becomes a controversy issues nowadays. However, as the capital size of the implementation accounts for more than HK\$136 billion, in which, passengers might be required to pay around HK\$100 each trip and CX also required to support the associated development cost.

#### **2.1.4 Decreasing Customer loyalty**

Attractiveness of traditional frequent flyer programs or mileage schemes have been questioned and customer loyalties have dropped significantly due to time-related factors are most important to business passengers, ineffective and unattractive air ticket redemption policies, inconvenient mileage accumulation practice, and limited redemption period (Anon, 2009). It was also revealed that FFP not for leisure travellers and only reward active members (McCaughey, 2008). However, business travellers are willing to pay premium fare on more convenience schedule and better services. With more diversified and upgraded tastes and life styles, CX's customers are now less attracted by bundled ancillary services which have been around since the inception of the airline industry.

The advancement of technology which allows them to hold meetings with overseas clients and colleagues online, and it would be their service expectation. Furthermore, with the ease of comparing the air ticket prices and flight schedule online, both leisure and business travellers are now seeking better value for money and best flight schedule for themselves.

### **2.2 Available Solutions to the Critical Situations**

#### **2.2.1 Dealing with uncertain economic outlook**

Some airlines have shown inclination towards fleet expansion during the financial crisis that happened in 2008, while others have opted for introspection and adopted a more cautious approach.

One group which stood out for its positive decision-making is Air Asia. Its low-cost long-haul affiliate Air Asia X confirmed an order for 10 Airbus A350 XWB aircraft in 2009, the year after the financial tsunami. According to the group, the move was set to seal the airlines' vision to be the world's first long-haul and short-haul low cost airline.

Qantas, which considered the global downturn to be a crisis for the aviation industry, deferred their aircraft orders and froze capital expenditure. The cancellation of 15 B787-9s would reduce the group's aircraft capital expenditure by US\$3 billion.

CX, on the other hand, sold five Boeing 777-200 aircrafts to raise cash amid the global economic crisis. It also delayed construction of its Hong Kong cargo terminal and reduced its

free baggage allowance for economy class passengers to North America to reduce the weight of their flights. The maximum weight per bag was reduced from 32 kilograms to 23 kilograms for the Americas (The Standard Online, 2009)

In the year following the economic downturn, CX committed to 30 fuel efficient Boeing 777-300ER. The 777-300ER is 22% more fuel efficient per payload ton than a 747-400. They also brought forward the retirement of the remaining Classic freight. Meanwhile, they got the delivery of six 747-400ERFs, which was 16 per cent more fuel efficient than the retiring Classic and ordered ten 747-8Fs, which was 22 % more fuel efficient than a Classic and 12% more than a 747-400F (Ritesh, 2009).

### **2.2.2 Combat with the shrinking operating cost**

To offset the impact of soaring fuel prices (Wikipedia, 2011), CX may follow its rivals, including Qantas Airways, in raising its fuel surcharge. However, carriers, many of which also hedge in the oil market, would not be able to fully pass additional costs to customers, and that would bite into their profits.

During the last two years, the majority of airlines in the Asian region have chosen to sit tight and maintain their previous hedging positions because the losses they took on the so-called 'zero-cost' collar strategies were only paper losses that are mark-to-market – a strategy that has proved successful as oil has once again risen, with several airlines able to write back losses. However, despite their 2010 losses of HK\$41 million and 2008 losses of HK\$7.6 billion hedging contracts with oil dealers after the sharp reversal in oil prices, CX's Chief Financial Officer James Hughes-Hallett said that CX has hedged as much as 30% of its jet-fuel needs for the next one to three years (Li J. , 2011).

As mention before, CX plan to retire their 21 Boeing 747-400s and 11 Airbus A 340-300 aircraft before the end of the decade as they take delivery progressively of new generation aircraft that will provide much greater fuel and operating cost efficiencies. In August 2010, CX announced her biggest ever aircraft order, of 30 Airbus A350-900s and six more Boeing 777-300ER aircraft. (Li, 2011).



Apart from the high fuel price, CX should increase its productivity by automation, cost reduction by better training to their staffs, crew scheduling and pairing. On the other hand, CX is without choice to introduce ancillary service under the pressure from the US airlines.

Furthermore, as there is an increasing demand of using passenger flights to carry air cargos (Wong, Zhang, & Hui, 2009) due to JIT, lean manufacture, small batch production and distribution, reducing costs on air freight handling and higher living standards (Sandhu, 2006), CX should try to spare more belly space on passenger flights for enhance cargo loads by providing unbundled ancillary serviced trips to its passengers (Mcfarlan & Young, 2003).

### **2.2.3 Tight competition between airlines**

To alleviate the pressure brought by the competition within the traditional network carriers, forming alliance with other airlines could be a strategy (Pels, 2008). In addition to Oneworld alliance, CX is cooperating with Air China to tap mainland sales, through steps including code shares. The two, which own stakes in each other, are also forming a cargo venture that will give CX access to freight hubs in Shanghai and Beijing.

With regard to customer service and flight experience, CX is spending HK\$1 billion on new business-class cabins and services to attract more premium travellers (Zithaml, Bitner, & Gremler, 2009). In 2010, CX opened a new first and business class lounge in London, CX is also working on renovating its main lounge, The Wing. In September 2010, CX opened The Cabin, its fourth airport lounge in Hong Kong, which offers Apple iPads and a health bar in the hope of offering exquisite VIP services to its premium customers.

With the optimistic to the demand of flight, CX launched two new destinations in 2010, Milan and Moscow. In 2011, new destination, Abu Dhabi is also launched on 1<sup>st</sup> of June. On 3<sup>rd</sup> June 2011, CX also announced an expanded code-share agreement with Oneworld alliance partner American Airlines (AA). "CX" code will be placed on selected AA domestic flights between O'Hare International Airport in Chicago and nine US after new daily service between HK and Chicago had been launched from 1<sup>st</sup> of September 2011. The latest arrangement will also cover AA services from Los Angeles to Phoenix and Salt Lake City.

To remain competitive in the cargo handling field (Wong, Zhang, & Hui, 2009). CX resumed major construction of its new cargo terminal and it is expected to commence operation in

early 2013. It is expected that the air cargo handling capacity of the airport will be increased by some 50% to 7.4 million tons per year.

#### **2.2.4 Recapturing Customer loyalty**

CX should introduce tailor made ancillary services to suit the customized needs and boost their customers' loyalties (Liu & Luk, 2009). With the advance in technology, the cost on providing customised services is reduced, and the comprehensive training to their crews can be achieved because of the increment of education level. Furthermore, from a merely financial point of view, it is vital for CX to tap into a new market for generating extra profits. As the purpose of the trip will determine consumer's purchasing behaviour disregarding to demographic information, it is necessary to identify the air traveller segmentation in order to determine which products and services they value most and are willing to purchase. i.e. Cost-conscious Leisure, High-end Leisure, Tour Operator, Weekend Getaway, Managed Corporate, corporate Booking, Group, Package or Unmanaged Business Travel (Sileo & Steinbrink, 2002). To get advantages over its rivals, it is possible for CX to drop some unpopular ancillary services to provide lower ticket fares and keep the best flight schedules.

### **2.3 Importance of Ancillary Services**

Being an important financial component for low-cost carriers, ancillary services may be the last sort for compensating the declining passenger revenue.

The first ancillary services were launched in 2001 by the Europe's largest low fare airline, Ryanair (Starmer-Smith, 2009). In 2007, when the oil price reached the neighbourhood of US\$100 per barrel, Ryanair announced record half-year profits. Its CEO, Michael O'Leary, said that the record profits reflect a 20% growth in passenger volumes, and strong ancillary growth. Ancillary revenues grew by 54% to €252 million and accounted for over 16% of total Ryanair's revenues.

Since then, ancillary revenue activities have become a necessary ingredient contributing to the income, and the expansion of them does not stop. According to Blue Sky, airlines all over the world from legacy airlines to low cost carriers earned over US\$58 billion in ancillary revenues in 2010, while for many airlines ancillary revenues accounted for a huge part of their

total revenues, like Allegiant (29.2%), Spirit Airlines (23.9%) and Ryanair (22.2%) (Wikipedia, 2010).

Basically, there are three categories of ancillary services:-

### **2.3.1 “A la carte” features**

A la carte features are separate amenities a consumer can order while travelling. The list continues to grow and the following lists typical activities: 1) on-board sales of food and beverages, 2) checking of baggage and excess baggage, 3) assigned seats or better seats such as aisle rows, 4) call centre support for reservations, 5) fees charged for purchases made with credit cards, and 6) early boarding benefits (Wikipedia, 2010).

### **2.3.2 Commission-based products**

Commissions earned by airlines on the sale of hotel accommodations, car rentals and travel insurance. These primarily involve the airline’s web site, but it can include the sale of duty-free and consumer products on-board aircraft.

### **2.3.3 Frequent flyer programs**

The frequent flyer is classified based on the sale of miles or points to program partners such as hotel chains and car rental companies, co-branded credit cards (co-branding), online malls, retailers, and communication services (EyeForTravel, 2011)

Industry agreement largely exists for inclusion of à la carte features and commission-based products under the ancillary revenue banner. These are perfectly aligned with Ryanair’s current ancillary revenue activities. Frequent flyer activities represent an inclusion that is growing in acceptance (Wikipedia, 2010).

## **2.4 Feasibility Study of Unbundling Ancillary Services**

According to the Centre for Asia Pacific Aviation (CAPA), ancillary revenues made up about 15% of total revenues for budget carriers in mature markets in 2010. When Asian airlines find that less than 5% of their revenues are coming from this, it certainly points to them that there is a large revenue opportunity by implementing ancillary revenue programs (Centre for Asia Pacific Aviation, 2009). It is expected that full-service carriers are going to offer more extra

ancillary services with charges as they have to keep their costs lower and compete with the low cost carriers (Chris Howells, 2010).

Apart from boosting revenues, it is also vital for airlines to provide ancillary services if they want to stay competitive within the industry. When more and more traditional airlines are offering its passengers options of full fare/full service, reduced fare/reduced service and higher fare/upgraded service (like premium meals), those who do not have such options are relatively vulnerable.

There is no doubt that airlines' ancillary revenues will still maintain fast growth, especially for those airlines which were slow to join the trend. They are trying to catch up and looking to innovate themselves. Even those that remain reluctant, fearing negative passenger reaction and brand dilution, are carefully adding products that can provide new revenue sources without affecting their overall strategy (Sobie, 2010).

#### **2.4.1 Difficulties on the implementation of unbundled ancillary services**

For the difficulties on the implementation of the unbundled ancillary services, they can be summarized into three major problems.

##### Technological Requirement

Sophisticated information technology and computer systems are needed when it comes to the sales, issuing and amending of air tickets. However, with the addition of a huge variety of ancillary services available for the passengers, a far more sophisticated system would be the goals of the airline industry.

In April 2011, a Global Business Travel Association task force aiming to spearhead an industry solution for reporting ancillary airline data appeared rudderless in the wake of its influential co-chair's departure.

The exit from the task force of United Airlines director of global accounts Cyndi Hunter is just one in a number of setbacks the industry has faced in defining and implementing solutions that many hope eventually will enable corporate travel buyers to book, track and report on ancillary airline fees.

Actually, it is difficult and unnecessary to handle vast amount of data between airlines, charging bodies and passengers when they are purchasing or not purchasing unbundled ancillary services along with their air tickets. The quitting of Hunter simply shows that it would take a long time and enormous investment to come up with a perfect system (Business Travel News, 2010).

### Charges on the Checked Baggage

Airlines can boost their revenues by "unbundling" the travel experience by charging separate fees for services such as checked baggage and beverages served on-board. Low cost carriers such as EasyJet and Ryanair have generated significant profit from ancillary revenue. However, the consumer backlash from charging fees (for services included in the price of a ticket by other airlines) can damage a carrier's reputation. For example, "European Skyway Robbery" was the headline written by noted travel columnist (Greenberg, 2007) to warn consumers of abusive overcharging for baggage fees in Europe by EasyJet and other carriers.

There is a finite limit to amount of charges that passengers will accept as JetBlue had to drop its charges for pillows and blankets, while United Airlines discontinued charging for food on transatlantic flights due to widespread customer complaints. The world's largest carriers are not immune from the public backlash against aggressive ancillary revenue actions. British Airways also wanted to boost its ancillary revenue with higher baggage fees during 2007. The carrier eventually backed down after the public outcry became too great. These have turned airlines into finding ways to increase ancillary revenue without hurting their brand (Wikipedia, 2010).

### Lack of Novelty

While Americans adopt ancillary services, it is still a new to Asian, as air trip takers in Asia are getting used to receiving premium services. They may take a long time to adopt the changes on the trade-off between the selectable services and prices.

## 2.5 Exploring Customer Preferences, Expectations and Satisfactions of Ancillary Services

### 2.5.1 Rationales

The reason why customer satisfaction is so important is that it leads to repeat business and customers enjoying good quality and service enough to return time and time again. Their loyalty will result in additional spending, increased market-share through word-of-mouth promotion, improved reputation, and increased profits.

Airlines generally compete based on costs and fees, which is necessary to make their organizations stronger in an extremely difficult environment. It is vital for CX to be conscious that building a base of committed passengers is also about creating a travel experience that fosters emotional attachment to a particular carrier, which in turn may make customers willing to flex their schedules or pay a little more for their air trips (Murphy, 2008).

CX has always set itself extremely high targets in customer service. Its' customer service philosophy is to offer "Service Straight From The Heart" — a unique service concept, built around personal recognition at all service touch points to make its customers feel comfortable, secure and special. Therefore, understanding its customers' needs is more important to CX than to any other airlines.

Through on-going dialogue, CX is able to improve its offering, develop new services and build long-term relationships with customers. Feedback from its customers is also important to it and mechanisms are in place for it to channel criticism or recognition to relevant departments so that it can learn from those areas or motivate the team respectively. (Cathay Pacific, 2009).

### 2.5.2 How to grasp the preference and expectation

The most commonly used method for businesses to acquire customers' preferences, expectations and satisfactions is conducting surveys. There are basically two types of surveys – one is done by the business, in our case, the airline, itself and the other one is conducted by a third party.

### Airlines' surveys

One of the advantages of using survey is the customization. The company has the full control on what they want to know. CX frequently access the customers satisfaction using the online survey (i.e. between April 8 and 29 in 2011) with the encouragement of luck drawn (Cathay Pacific, 2011).

CX also measures satisfaction through its on-going Reflex Passenger Survey, where it samples its flights daily across all classes, enabling it to collect around 30,000 responses for both CX and Dragonair per month. The purpose of the survey is to evaluate what passengers think about their travel experience with it. CX's 2009 results showed a significant increase in most areas of customer satisfaction relating to its services.

In addition, CX held four focus group discussions led by an independent party to obtain feedback from a sample of its Marco Polo Club members, its most frequent flyers on its products and services and their expectation (Cathay Pacific, 2009).

### Third parties' surveys

Third parties who conduct different kinds of surveys are employed to access the customers' opinion and Skytrax is one of the most recognized one.

Since 1989, Skytrax, which is the largest reviewer, has been operating the consumer air travel guide (Skytrax, 2011) with annual revision on over 675 airlines and 700 airports.

Every year, Skytrax announces the annual Passenger's Choice Awards, which are decided by over 28 million air travellers, from more than 100 nationalities. The survey methodology is audited each year to ensure high transparency, and to guarantee maximum integrity to winners of the Passenger's Choice Awards. In the 2010 Passenger's Choice Award results, over 215 airlines and 207 airports across the globe were voted for by air travellers (Skytrax, 2011).

## 2.6 Deployment of Kano model, SERVQUAL Dimension and IPA

Here the suitable servers for CX are deduced based on the two models.

### 2.6.1 Kano Model

The Kano model is a theory of product development and customer satisfaction, and it is developed in the 80s by Professor Noriaki Kano. The purpose of the tool is to support product specification. The model can then provide a conclusive determination on the degree of fulfilment of the service attributes (Sauerwein, Bailom, Matzler, & Hinterhuber, 1996).

### 2.6.2 SERVQUAL Dimension

SERVQUAL is with a multi-item scale to access the discrepancy between the expectations and the perceived service quality. The use of perceived as opposed to actual service received makes the SERVQUAL measure an attitude that is related to, but not the same as, satisfaction. (Zeithaml, Parasuraman, & Berry, 1988)

### 2.6.3 Importance-Performance Analysis (IPA)

The work of (Martilla & James, 1977) established an IPA that considered a relationship between importance and performance as well as theorized that target levels of performance for particular product attributes should be proportional to the importance of those attributes. The IPA technique identifies strengths and weaknesses by comparing of two criteria that consumers use in making a choice. One criterion is the relative importance of attributes. The other is consumers' evaluation of the offering in terms of those attributes.



### 3. Research Methodology

The identification of ancillary services which CX could implement will be done by using Kano model, SERVQUAL Dimension and Importance-Performance Analysis (IPA).

#### 3.1 Introduction of Kano Model

Simple proportional relation is assumed for the customer satisfaction and the performance of the product, service or process in traditional. That is, the less functional the product, service or process, the less satisfied the customer, and the more functional the product, service or process the more satisfied the customers. In other words, customers' satisfaction is directly proportional to the degree of execution of the corresponding product or service. In 1984, however, Professor Noriaki Kano from Tokyo Rika University argued that some products and services are not "one-dimensional" and developed a set of ideas for planning a product or service (Kano, Nobuhiku, Fumio, & Shinichi, 1984).

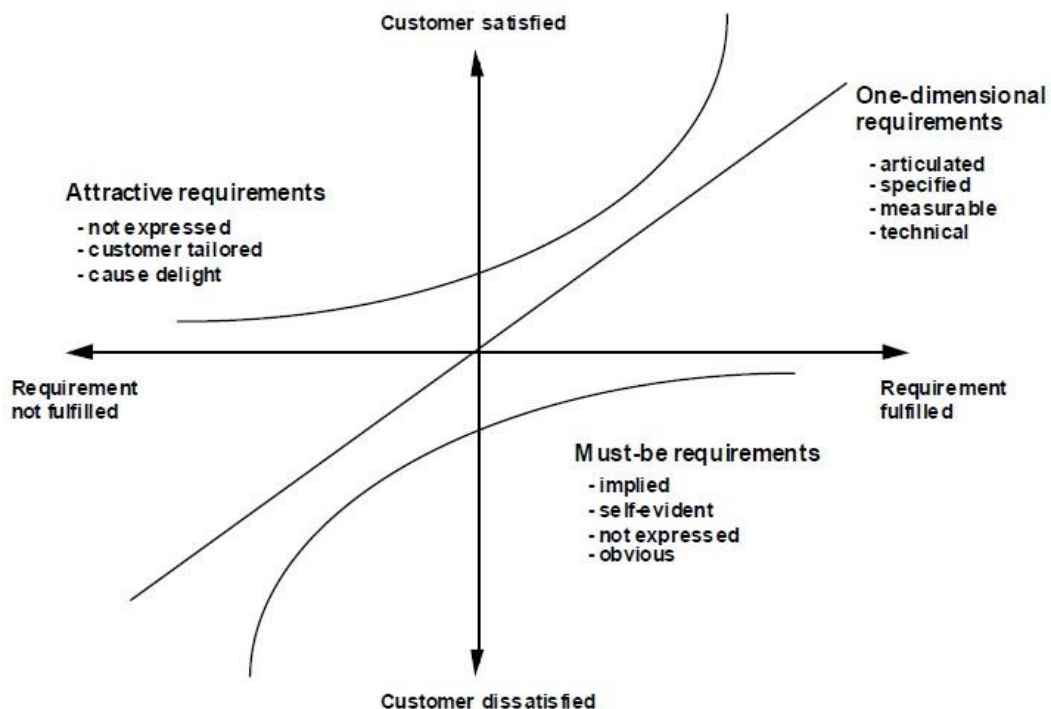


Figure 2: Kano model of customer satisfaction

Figure 2 shows the Kano model of customer satisfaction. The horizontal axis of the Kano model indicates how well a product or a service is executed (performance), while the vertical

axis indicates how satisfied the customer is. Professor Kano pointed out that there are three distinct relationships between customers' satisfaction and the degree of performance.

***One-dimensional*** - the line going through the origin at 45 degrees graphs the situation in which customer satisfaction is simply proportional to how fully functional the product, or service is. One-dimensional requirements are usually explicitly demanded by customers.

***Must-be*** - The "Must-be" curve indicates aspects where the customer being dissatisfied when the product, service or process is less functional, but the customer's satisfaction never rises above neutral no matter how functional the product, service or process becomes. If these requirements are not fulfilled, customers will be extremely dissatisfied. On the other hand, as customers take these requirements for granted, their performances will not increase satisfactions.

***Attractive***- The "Attractive" curve indicates areas in which customers are more satisfied when the product or service is more functional but are not dissatisfied when the product or service is less functional. These requirements are the product criteria which have the greatest influence on how satisfied a customer will be with a given product or service. Attractive requirements are neither explicitly expressed nor expected by customers. Fulfilling these requirements leads to more than proportional satisfaction.

### **3.1.1 Mapping of Ancillary Services to Kano Categories**

First, focus group interviews will be conducted to identify the possible ancillary service attributes. A Kano questionnaire will then be designed to see whether the requirements are "One-dimensional", "Must-be" or "Attractive".

According to Kano, a pair of questions will be formulated to which interviewees can answer in one of five different ways for each attribute. The first question concerns the reaction of interviewees if CX provides that feature (functional form of the question), while the second concerns their reactions if the CX fails to provide that feature. Here is an example:

Functional form of the question	→	<p>1a. If CX provides in-flight meals, how do you feel?↵</p>	<p>1. I like it that way 2. It must be that way 3. I am neutral 4. I can live with it that way 5. I dislike it that whay</p>
Dysfunctional form of the question	↶	<p>1b. If CX fails to provide in-flight meals, how do you feel?↵</p>	<p>1. I like it that way 2. It must be that way 3. I am neutral 4. I can live with it that way 5. I dislike it that whay</p>

Figure 3: Example of Kano functional and dysfunctional questions

By combining the two answers in the following evaluation table, the ancillary services can be classified:

Customer requirements		Dysfunctional (negative) question				
		1. like	2. must be	3. neutral	4. live with	5. dislike
Functional (positive) question	1. like	Q	A	A	A	O
	2. must-be	R	I	I	I	M
	3. neutral	R	I	I	I	M
	4. live with	R	I	I	I	M
	5. dislike	R	R	R	R	Q

Customer requirement is ...

A: Attractive  
M: Must-be  
R: Reverse

O: One-dimensional  
Q: Questionable  
I: Indifferent

Figure 4: Kano evaluation table

There are three more categories of requirements.

***Indifferent*** - A customer may be indifferent to a quality element and would be plotted roughly along the horizontal axis that is, the customer is neither satisfied nor dissatisfied whether the product, service or process is dysfunctional or fully functional.

***Reversed*** - A priori judgment of functional and dysfunctional is the reverse what the customers feel. Product or service that falls into this category is not only unwanted by customers but they even expect the reverse.

***Questionable*** - There is a contradiction in the customers' answers to the questions.

### **3.1.2 Planning Product and Service Strategy**

Product or service criteria, which dominates the customer's satisfaction, can be identified using Kano model, and it can priorities for product and service development. It is not worthy to invest on the improvement on the must-be items with satisfactory level, but it is worthy to improve one-dimensional or attractive requirements because of the great influence on perceived product or service quality.

### **3.1.3 Evaluation and interpretation of the results obtained**

The data obtained from the questionnaires will be evaluated in three steps. First, the answers to the functional and dysfunctional questions will be constructed in the Kano evaluation table (see Figure 5). Then, the frequencies for each of the six categories will be tabulated. Finally, the outcome will be analysed and interpreted.

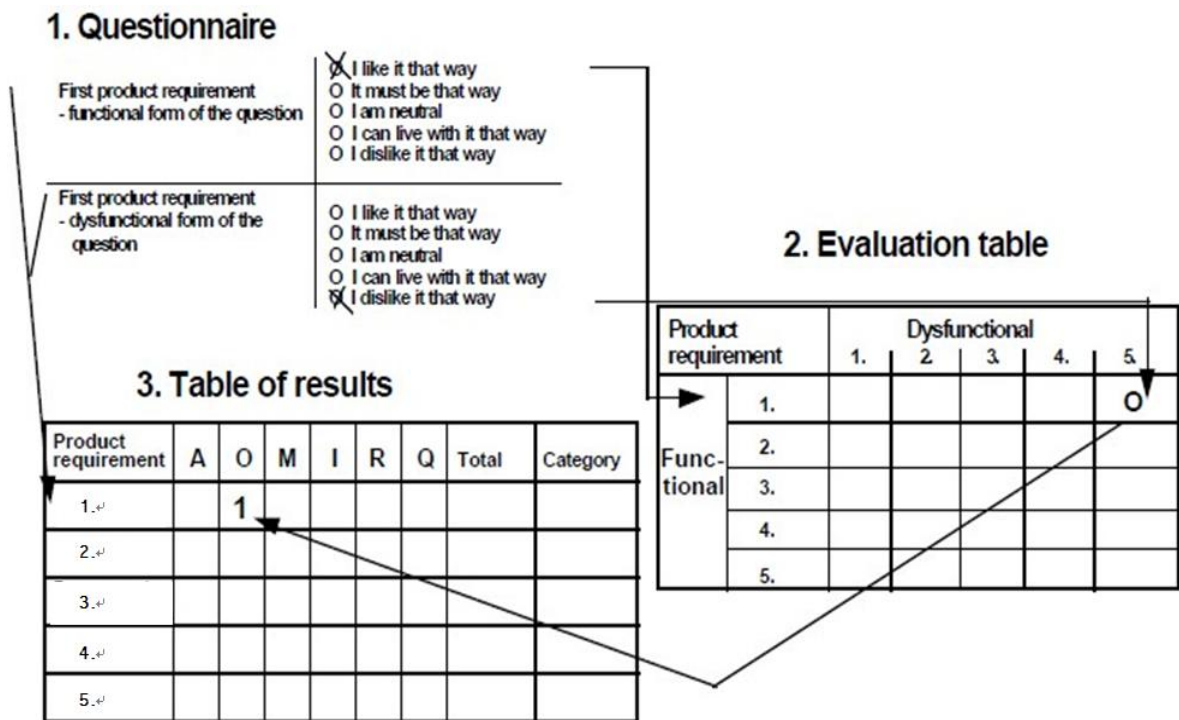


Figure 5: Kano evaluation process

An overview of the requirement categories of the individual product or service requirements is gained from the table of results.

Product requirement	A	O	M	I	R	Q	Total	Category
Edge grip	7	32.3	<b>49.3</b>	9.5	0.3	1.5	100%	M
Ease of turn	10.4	<b>45.1</b>	30.5	11.5	1.2	1.2	100%	O
Service	<b>63.8</b>	21.6	2.9	8.5	0.7	2.5	100%	A

The final results will be evaluated and interpreted according to the frequency of answers. For example, edge grip would be a must-be requirement (49.3%) and ease of turn a one-dimensional requirement (45.1%).

A more differentiable interpretation is required for the threshold, as the answers to a product requirement are often spreading out over multiple categories. In this case, it is believed that this distribution can be explained by the fact that customers in different segments have different product expectations

If the questionnaire includes sufficient customer-oriented variables, the results can be used as

the ideal basis for market segmentation and thus differentiation of products and services according to utility expectations of the different customer segments.

### 3.2 Evaluate Expectation and Perception Value with SERVQUAL Dimension

SERVQUAL is commonly used as diagnostic technique for uncovering organisation's service quality strengths and weakness. To understand the customer perceptions of ancillary services, it is needed to evaluate their level of satisfactory or service quality on the current services and identify the need to be changed. A Service quality framework (SERVQUAL Dimension) will be used to define customers' evaluation of service quality as a function of the gap (difference) between expected ancillary service and perceived ancillary service.

From the widespread applications published, the benefits of SERVQUAL can be summarized as follows:

- It is good at eliciting the views of customers regarding service encounters.
- It is able to alert management considering the perception of both management and customers.
- Addressing the service gaps can serve as a basis for formulating strategies and tactics in order to ensure the fulfillment of expectations.
- SERVQUAL is able to identify specific areas of excellence and weaknesses.
- It is able to prioritize areas of service weaknesses.
- It provides benchmarking analysis for organizations in the same industry.
- SERVQUAL can trace the trend of customer relative importance, expectation, and perception, if applied periodically.

Parasuraman et al. (Zeithaml, Parasuraman, & Berry, 1988) identified the following five gaps that can result in unsuccessful service delivery:

- (1) *Gap between customer expectation and management perception.* This may result from a lack of understanding of what customers expect from a particular service.
- (2) *Gap between management's perception and service quality specifications.* This gap results when there is a discrepancy between what management perceives to be the customers' expectations and the actual established service quality specifications.
- (3) *Gap between service quality specifications and service delivery.* Even when guidelines or specifications exist for performing excellent service, its delivery may not be up to standard due to poor employee performance, resulting in this gap.
- (4) *Gap between service delivery and external communication.* Customer expectations are established by promises made by a service provider's promotional messages. This gap measures the consistency between the quality image portrayed in promotional activities and the actual quality services offered.
- (5) *Gap between perceived service and delivered service.* This gap results when one or more of the previous gaps occur.

In which, Gap 5 score will be calculated based on the result of survey in order to identify the gap between a customer's perception of the experience and their expectation of the current ancillary services.

The following factors influence customer perceptions of ancillary services and relationships among customer satisfaction, service quality and individual service encounters will be explored:

- To discover customer requirements or expectations for the ancillary service.
- To monitor and track the ancillary service performance by deploying SERVQUAL survey.
- To evaluate the gap between the customer expectations and perceptions of the ancillary service.

- To appraise the service performance of individuals in teams for evaluation, recognition, and rewards in order to incorporate the use of the ancillary services into the airlines' rewarding program.
- To determine the customer expectations for a new ancillary service.
- To monitor changing the customer expectations in an ancillary service.
- To forecast future expectations of the customers on the ancillary service.

Parasuraman and Berry also (Zeithaml, Parasuraman, & Berry, 1993) proposed customers' service (pre-purchase) expectations exist at two different levels, which are desired level and adequate level. The difference between the two level would be called the zone of tolerance which are the service is recognize and accept heterogeneity by the customer. They also defined the zone of tolerance as the range of service performance that a customer considers satisfactory. A performance below the tolerance zone will decrease customer loyalty. A performance level above the tolerance zone will strengthen their loyalty. The model also implies that a consumer is likely to be satisfied with a service experience even when performance is poor – if expectations are relatively low. In general, the consumer did not expect much – so anything above these results in satisfaction.

Moreover, the gap between the customer perceptions and expectations of ancillary services should also be explored to measure the services quality, minimize the gaps and satisfy the customer needs (Gillen & Gados, 2008). Furthermore, the desired and adequate ancillary services standard and the factors influence customer perceptions of ancillary services will also be evaluated (Gillen & Morrison, 2003).

SERVQUAL questionnaire is one of the best instruments for measuring the quality of services as perceived by the customer. In addition to the Kano questionnaire, interviewees will also be requested to rank the importance, expectation and perception of the existing ancillary service attributes. Each service attribute will be given a rank from 1 to 7, with 1 being the least important and 7 being the most important. Interviewees will mark their choices according to the following legends.

Level of importance = Circle (○) the number that indicates the level of importance of the concerned ancillary service to you based



on 7-point scale

Customer perceptions = Tick (✓) the number showing how you are satisfied with the concerned ancillary service provided by CX based on 7-point scale

Customer expectations = Cross (X) the number showing your expectation on the concerned ancillary services provided by CX based on 7-point scale

No	Attribute	1	2	3	4	5	6	7
1	In-flight meals			○	✓	X		
2	In-flight beverage			○	✓		X	
3	In-flight refreshments	○						✓
4	Free checked baggage allowance				✓		X	○

Figure 7: Example of answers to importance, perceptions and expectations

The importance level value, expectation value and perception value will be the average values of importance level, customer perceptions and customer expectations respectively.

### 3.2.1 Determine weights for SERVQUAL dimension

The service attributes identified by the focus groups will be categorized into groups. Interviewees will be requested to give weights to these groups. The average weights will be the SERVQUAL dimension weight.

### 3.2.2 Calculation of GAP 5 Score

Gap 5 score will be determined by subtracting the expectation value from the perception value and then multiply the difference by SERVQUAL dimension weight.

$$\text{Gap 5 score} = \text{SERVQUAL dimension weight} \times (\text{perception value} - \text{expectation value})$$

## 3.3 Introduction to Importance Performance Analysis (IPA)

Importance-Performance Analysis, IPA, was formulated by (Martilla & James, 1977). It was dubbed Action Grid Analysis, AGA, by (Woodside & Martin, 2008) and it was introduced as a way of understanding customers' needs and desires so as to make good management

decisions about how to respond to them. By taking consideration on importance and performance (perception value) on attributes of a product or a service, it is able to modify performance on attributes to, for instance, increase profit or customer satisfaction effectively.

Based on the obtained results, the service attributes will be plotted onto the Importance-Performance coordinate plane with the perception value as the x-axis and the expectation value as the y-axis. A vertical line will then be drawn through the mid-point of the highest and lowest performance values while a horizon line will be drawn through the mid-point of the highest and lowest importance values. By categorizing the attributes into the four different groups, it will be easily discovered that which attributes need immediate actions in order to close the gap between customers' expectations and company's performance and satisfy customers' needs.

*Quadrant I - high importance / low performance*

It is “**Concentrate Here**”, and it means that corrective actions should be done

*Quadrant II - high importance / high performance*

It is “**Keep up the good work**”, which means the services should be maintained

*Quadrant III - low importance / low performance*

It is “**Low Priority**”, and it is no threat to the company and can be ignored

*Quadrant IV - low importance / high performance.*

It is “**Possible Overkill**”, which signified that the service is not important but it receives attention.

Importance	High	Concentrate here <b>I</b>	Keep up the good work <b>II</b>
	Low	Low priority <b>III</b>	Possible overkill <b>IV</b>
		Low	High
		Performance	

Figure 8: Importance – Performance coordination plane

### 3.4 Integration of Kano Model, SERVQUAL Dimension and IPA

Kano model categorizes service attributes based on their relationships with customer need, i.e. must-be, one dimensional or attractive. However, it does not quantify either the numerical or qualitative performance of the attributes or explain the drives of customers' perceptions and degree of importance to the particular attributes. SERVQUAL model differentiated service quality from customer satisfaction, but it assumes a linear relationship between customer satisfaction and service attribute performance.

According to Bharadwaj and Menon (Bharadwaj & Menon, 1997), Kano model is unable to evaluate the performance of attribute. Integration of it into SERVQUAL enables the characterization of the product-attribute/customer-need relationship. It might also illuminate the pattern of predicted and perceived service as well as the time-dependent relationship between attribute performance and customer satisfaction.

Tan C & Pawitra A (Tan & Pawitra, 2001), suggested that integration of Kano model and SERVQUAL model not only able to counteract the linearity problem of SERVQUAL model, but also the prioritization for improvement of the weak attributes can be based on which Kano category each attribute falls into and help the SERVQUAL to prioritize the service gaps.

Beside the mentioned model for the integration, there is another framework to decode the customer, and it is with the objective of translating the customer expectation into specification limits. New model would built with the existing literature with ideas borrowed from the Kano model, SERVQUAL, Taguchi loss function, (IPA) and a new model is called "the Trade-Off Importance" (Gregorio & Cronemyr, 2011).

Integration of Kano and SERVQUAL models creates synergy that cannot be achieved through the application of both methods together. SERVQUAL measurement instruments are enriched with Kano's categorized needs of ancillary services. As such, it is benefit for the CX to prioritize their resource to improve the attractive ancillary services that are mostly accepted in terms of innovation to achieve the enhanced customer satisfaction.

As the combination of SERVQUAL and Kano model is unable to address and analyses the relative importance of the attributes and they fail to provide better direction for the research, IPA would be introduced as a guidance for the orientation.

### 3.5 Development of Customized Ancillary Services

Tan C. & Pawitra A. also identified three areas for further improving SERVQUAL. First, they identified the assumption made by SERVQUAL of linear relationship between customer satisfaction and service attribute performance may be not totally correct as pay more attention to a particular service attribute may not always lead to higher customer satisfaction if there is satiation or if that attribute is taken for granted.

Second, with increasing market pressure, continuous improvement may not be sufficient to maintain a competitive edge. Instead, organizations are seeking opportunities from the strategic innovation to maintain the competitive edge (Rodney McAdam, 2000).

Third, as SERVQUAL does not address how the gaps between customer expectations and perceptions can be closed, it is suggested that SERVQUAL can be integrated with Kano model to eliminate the linearity assumption and more focused on reducing the service gaps.

Four steps are involved in the integration of Kano model into SERVQUAL model to identify the service attributes, gathering of customer satisfaction data, prioritizing the level of importance of each attribute and measuring customer satisfaction by multiplying the level of importance with the gap between predicted service and perceived service.

The classification of the CX's strengths and weaknesses can integrate to various Kano's categories, and here are some guidelines for the downstream service development activities:

- Be innovative in strong attractive attributes.
- Maintain performance of the strong basic needs and one-dimensional attributes.
- Fulfil the customer on the weak basic needs attributes.
- Be competitive on the weak one-dimensional attributes.
- Avoid allocating resources to improving the weak attributes.

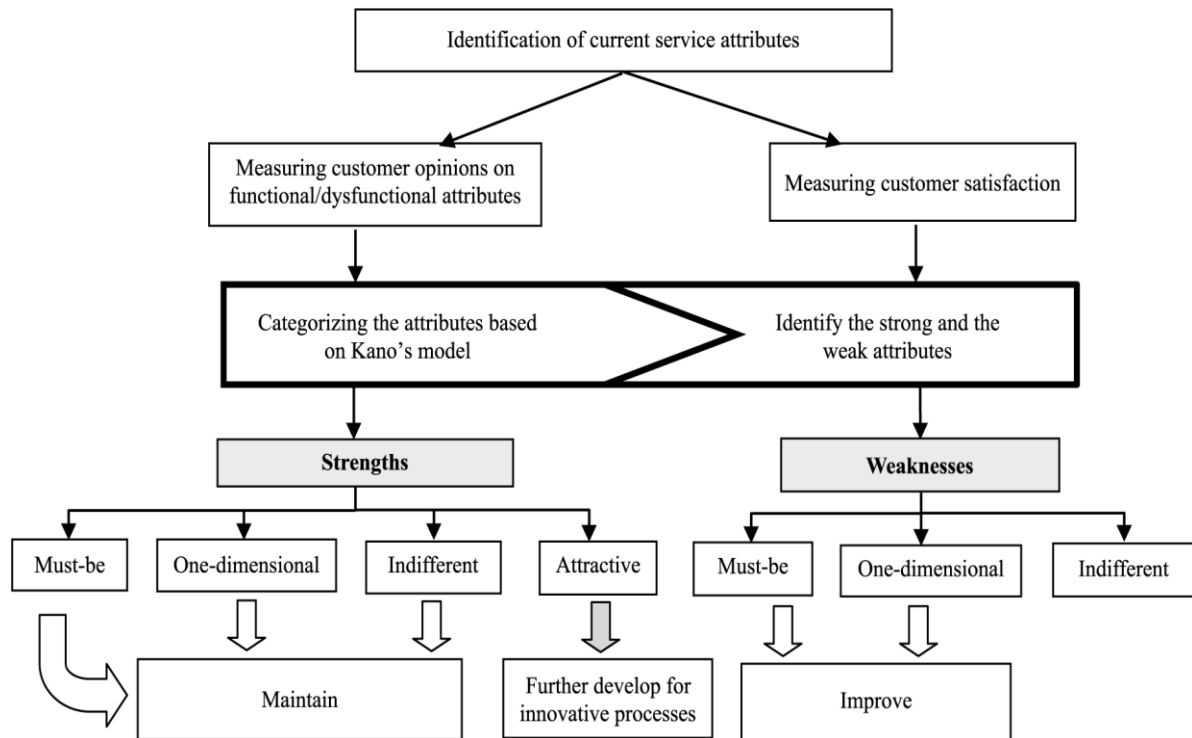


Figure 9: Framework to integrate Kano model into SERVQUAL

Trade-Off Importance method will also be built as Kano model is a purely qualitative model, it does not inform about the actual situation in the curve, for example, one attribute is classified as “must be” but the model does not give any information whether the current performance is, for example, in the severe dissatisfaction area or in the neutrality area.

To address the problem, the zone of tolerance was introduced. According to (Gregorio & Cronemyr, 2010) the “Must be” level is only a little above neutral because it is only a weak statement on the satisfaction, it represents a lack of dissatisfaction, though certainly more positive than neutral. Symmetrically, “can live with” is not a strong statement of dissatisfaction, but its grudging acceptance is more negative than neutral.

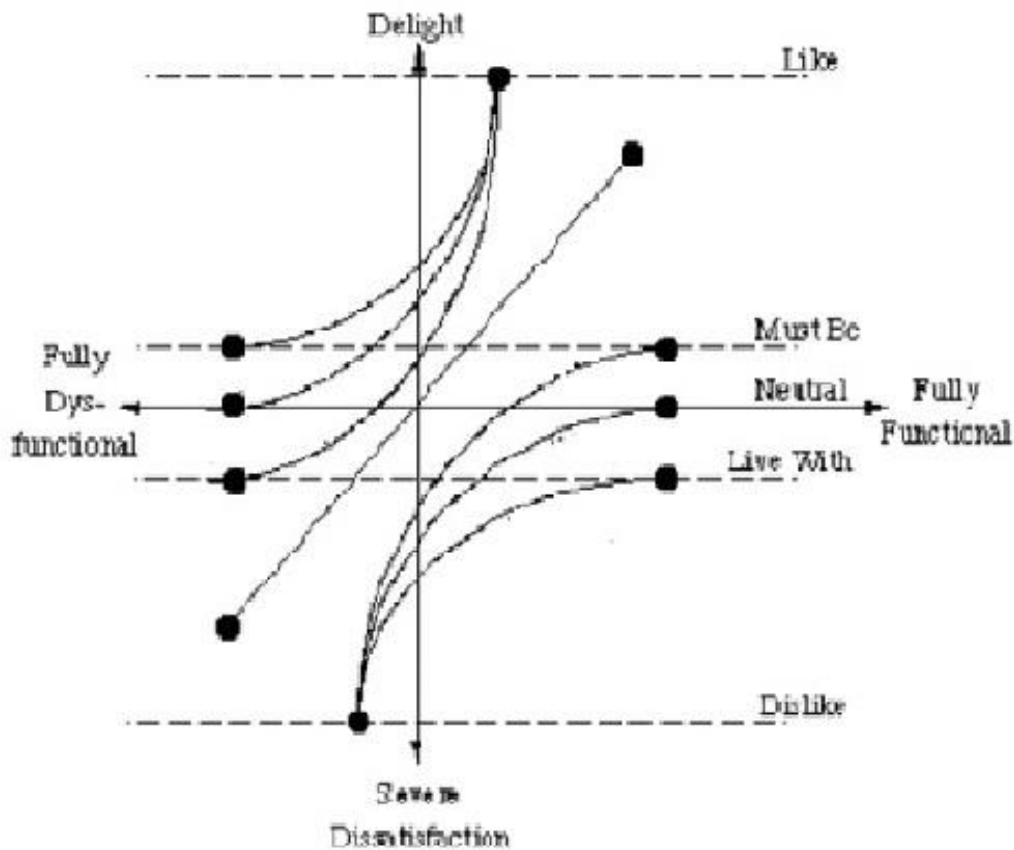


Figure 10: Trade-Off Importance Framework to integrate Kano model into SERVQUAL

Levelling the vertical levels of the Kano model with the wordings of the answers of the Kano's questionnaire and integrating SERVQUAL into the Kano model, in the vertical axis, the area between "It must be like that" and "I can tolerate it" is the satisfactory service level where the subjective zone of tolerance can be introduced.

In the horizontal axis, the actual performance was introduced in, for example, days or months and the plot the box plot from historical data.

### 3.6 Summary of the Approach Adopted

Some potential ancillary services are generalized base on the information from focus group. With integration of 3 models, suggestions on the existing and proposed ancillary services will be given. The flow of the research methodology can be summarized as follows:

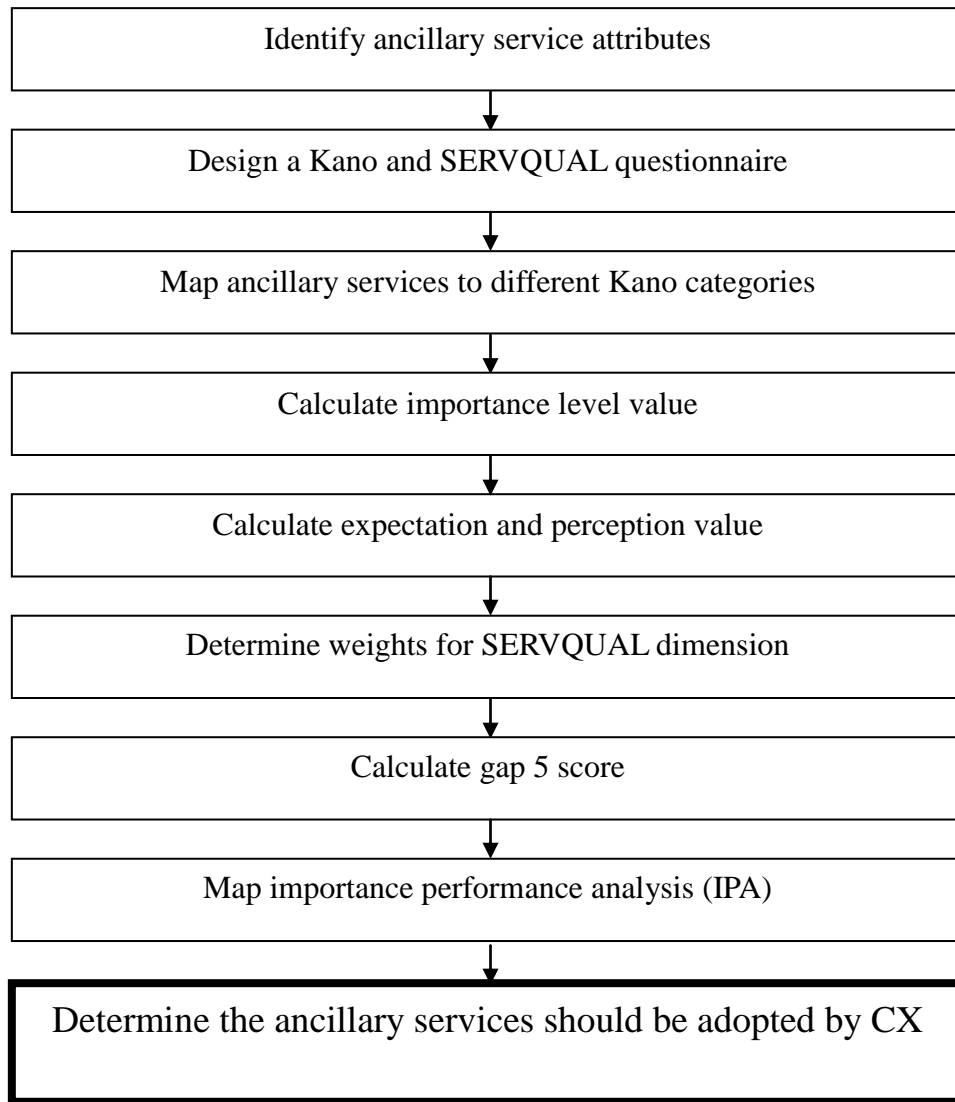


Figure 11: Flow of research methodology

## 4. Data Presentation and Findings

In this chapter, the obtained data are presented from the quantitative and quantitative research. In the section one of this chapter, the quantitative research has been conducted to grasp the background information for the current services and the expectation of CX's customers and potential customers, and these parts of research were used to determine the items to be investigated in the latter parts of quantitative research. Then, the data collected with quantitative means would be presented. With the Kano model, SERVQUAL dimension and IPA, the data is fitted into the framework, and the data would facilitate the analysis in the next chapter.

### 4.1 Identification of Service Attributes

Two focus groups interviews were held in June, 2010 to identify the service attributes where CX should look into. The sample of Question in English and Chinese will be presented in Appendix IV. The group of business travellers is shown below.

	<i>Name of Interviewee</i>	<i>Nationality</i>	<i>Age</i>	<i>Class of Flight</i>	<i>Frequency</i>	<i>Most Preferred Airline</i>	<i>Airline Chooser</i>	<i>Payer</i>
<i>1</i>	Saulius Sondeckis	Lithuanian	45	Economy	2 per year for architecture expo	KLM Royal Dutch Airlines	Company	Company
<i>2</i>	Herbert Sonnleitner	German	50	Business	More than 20 per year	Lufthansa	Company	Company
<i>3</i>	Daniele Menin	Italy	40s	Economy	12 per year	Emirate	Himself	Himself
<i>4</i>	Boonchai Jongjitaree	Thailand	40s	Economy	6 per year	Thai international	Company	Company
<i>5</i>	Todd Winsor	USA	Mid 30	Business	Every other week	Cathay Pacific	Company	Company
<i>6</i>	Joseph Arui	India	40s	Business	6 per year (guest professor)	China Airline	Himself	Himself



The followings are the interviewees of the group of leisure traveller.

	<i>Name of Interviewee</i>	<i>Nationality</i>	<i>Age</i>	<i>Work</i>	<i>Class of Flight</i>	<i>Frequency</i>	<i>Most Preferred Airline</i>	<i>Travel with</i>
1	Vicky Cheng	HK	40s	Housewife	Economy	4 per year	CX	Family (2 sons)
2	William Wong	HK	20s	Civil servant	Economy	3-5 per year	CX	Parents, girlfriend
3	Winnie Chan	HK	40s	Housewife	Economy	3 per year	CX	Family (2 daughters)
4	Lisa	Germany	20s	Backpacker	Economy	6 per year	Lufthansa	Mostly herself
5	XieyinQie	China Shanghai	Mid 30	Owner of a cosmetic company	Business/Economy	4 per year	Air China	Herself/husband

Based on the opinions of the interviewees from the focus group interviews, there are 18 services attributes, which are currently being provided by CX, that the interviewees considered important. The service attributes are as follows:

1. In-flight meals
2. In-flight beverages
3. In-flight refreshments
4. Free checked baggage allowance
5. In-flight personal entertainment system
6. In-flight magazine (Discovery)
7. In-flight magazines and newspapers
8. Personal amenities, pillows and blankets
9. On-board duty-free sale
10. Counter check-in
11. Agency ticketing service
12. Travelling packages offered by CX Holidays
13. In-flight special assistance (*elderly, pregnant women, infants, children,*

*unaccompanied minors, disabled or people with medical needs)*

14. Special baggage handling service (*early baggage check-in, urban check-in*)
15. Connecting flight
16. Premium airport lounge
17. In-flight Wi-Fi internet connection / satellite phone / fax service
18. Seats with extra leg room

The interviewees have also suggested 12 other service attributes that could possibly be provided by CX or rewards granted under certain conditions.

**Suggested paid services:**

19. Pre-ordered premium food and beverage (*wine, meals or food*)
20. Pre-ordered magazines and newspapers
21. On-board massage chairs
22. In-flight shower facilities
23. Seat selection (*aisle or window seats, etc.*)
24. Priority check-in and boarding

**Rewards will be granted if the arrangement is agreed**

25. Not receiving catering services on-board
26. No checked baggage
27. Only watching in-flight advertisements by using of in-flight personal entertainment system
28. Completing customer service questionnaire(s) during the flights
29. Purchasing air-tickets directly through CX e-Ticket system instead of travelling agencies
30. Use online check-in system, self-check-in kiosks and self-bag-drop counter

A questionnaire was then designed according to the chosen ancillary service attributes. Both English and Chinese versions (see Appendix V) would be provided. The questionnaire comprises 6 parts, and they are as follows:

- Part 1 functional and dysfunctional questions for each of the 18 CX's existing ancillary service attributes
- Part 2 functional and dysfunctional questions for each of the 12 suggested ancillary service attributes
- Part 3 3 questions about importance, perception and expectation for each of the 18 CX's existing ancillary service attributes
- Part 4 1 question about importance for each of the 12 suggested ancillary service attributes
- Part 5 weighting preferences of the five groups of ancillary service attributes
- Part 6 8 demographic questions

The survey was carried out mainly at the bus terminal in HKIA (convenience sampling), with 100 sets of questionnaires distributed to HK-resided people who had been a passengers. Another 20 sets of questionnaires were filled out by people in my social life like family, colleagues and classmates and their acquaintances (snowball sampling).

Five questions regarding to the functional and dysfunctional questions based on the requirement of Kano model, importance, perception and expectation questions based on the requirement of IPA and SERVQUAL dimension for each of the 18 CX's existing ancillary services will be asked to the respondent. SERVQUAL weight score for each groups of ancillary services will then be asked prior to fill in the remaining questionnaires for the suggested new ancillary services, rewards will be granted for giving-up ancillary services and demographic questions in order to comply the questionnaire efficiency and effectively.

The collected questionnaires were further divided into two groups according to the proposed classification, with one that were filled out by respondents whose purpose of their air trip to be taken that day were vacation, personal or family affairs or other purposes (Leisure Traveller) and one that were completed by respondents whose purpose of their air trip to be taken that day were official journey and private business (Business Traveller) (Kurt M. Dresner & Peter Stone, 2006). A key difference between leisure traveller and business traveller was highlighted in the literature and it is noted that business travellers have been found to place a higher values on time (DeVany, 1974), leading to their stronger preference for greater flight frequencies and shorter airport access times, while leisure traveller are tend to be higher price elasticity (Oum, Park, & Zhang, 1996), leading to the airlines offering

lower average fares on vacation routes to maximize revenues). The reason behind is assumed that the needs and behaviours of leisure traveller and business traveller are quite different. The findings are going to verify this assumption.

*Number of leisure travellers interviewed = 92 (77%)*

*Number of business travellers interviewed = 28 (23%)*

## 4.2 Demographic Characteristics of Interviewees

In this section, the demographic characteristic for the participants would be listed, and the distribution of each class is summarised in the following table:

Gender:	<u>Male</u> 56%	<u>Female</u> 44%				
Age:	<u>16-25</u> 8%	<u>26-35</u> 22%	<u>36-45</u> 35%	<u>46-65</u> 28%	<u>Retired</u> 7%	
Purpose of Travelling:	<u>Official Journey</u> 19%	<u>Private Business</u> 4%		<u>Holiday</u> 52%	<u>Visiting Relative</u> 25%	
Who picked the airline	<u>Yourself</u> 59%	<u>Company</u> 12%		<u>Agent</u> 24%	<u>Family</u> 5%	
Average time of flight (hrs.)	<u>1-3</u> 21%	<u>4-8</u> 31%		<u>8-12</u> 29%	<u>Over 13</u> 19%	
Times of Travelling in 3 yrs.	<u>1-5</u> 45%	<u>6-12</u> 32%		<u>13-20</u> 13%	<u>21 or more</u> 10%	
Class travelled	<u>First</u> 2%	<u>Business</u> 15%		<u>Economy</u> 83%		
Personal income	<u>&lt;10K</u> 5%	<u>10-15K</u> 9%	<u>15-25K</u> 17%	<u>25-40K</u> 26%	<u>40-60K</u> 28%	<u>&gt;60K</u> 5%

The purpose of travelling of the demographic data shows the actual classification, where the official journey (19%) and private business (4%) contribute the numbers of business traveller, and the holiday and visiting relative are the people of leisure travelling.

## 4.3 Distribution of Kano categories (in frequency)

Then, the Kano categories in frequency for the proposed classification, namely leisure traveller and business traveller, would be presented in Appendix VI and VII.

#### 4.4 Distribution of Kano Categories (in Percentage)

As the difference in term of the number of participants from the two groups, the data are presented in term of percentage for the ease of comparison. Also, the justification for the adoption of the proposed classification would be presented in Appendix VIII and XI.

The justification or the classification with the proposed method is presented in this part. From the Figure 2 and 3, we know that the similar graph would be generated with the percentage obtained and classified with certain groups. For example, it is possible to divide the interviewee groups in terms of gender, namely, male and female. Then, the two sets of numerical result was plotted similar to Figure 2 and 3.

In addition, correlation analysis was performed for the two sets of the percentage. For instance, the correlation of the percentage results of leisure traveller and business traveller were 0.7445 with p-value < 0.0001, which indicates the probability of the collection value of 0.7274 happens by chance only. With the higher correlation, or rho value, the correlation of the individual sets of results would be with higher depending relationship. It means that the small rho value would reveal the independence of the groups, and hence class would represent the different dimension for the results. As some of the categories are with more than two classes, it would be more than one rho value. For the sake of ease comparison, they are averaged for the final selection.

Similar calculation can be performed for the different kinds of classification according to the demographical information, and the values are summarized in the following table.

	<b>Proposed Classification</b>	<b>Gender</b>	<b>Age</b>	<b>Purpose of travelling</b>
Average rho value	<b>0.7445</b>	0.8512	0.8756	0.7852
Average p-value	<b>&lt;0.0001</b>	0.0210	0.0312	0.0214

	<b>Who picked the airline</b>	<b>Average time of flight (hrs.)</b>	<b>Times of travelling in 3 yrs.</b>	<b>Class travelled</b>
Average rho value	0.7552	0.8560	0.6991	0.5190
Average p-value	0.0365	0.0421	0.0122	0.5612

Table 1: Correlation Tests for the grouping methods (Kano Model)

With the acceptance rate of p-value as  $< 0.05$ , the classification with class travelled was eliminated. Although the average correlation value is low ( $\rho = 0.5190$ ), the p-value is too high ( $> 0.05$ ), which suggest that it would possibly happen by chance. For the remaining classification methods, it can be observable that the proposed method is with the lowest correlation values with the acceptable p-value. As a result, the classification was used.

#### 4.5 Dominant Kano Categories of the Two Types

Based on the result in previous sections, a list on the domination of the categories for the leisure traveller and business traveller was composed and will be presented in Appendix X.

#### 4.6 SERVQUAL Dimension Weight

The first 18 ancillary services are provided by CX, and they cover 5 main areas.

Services 1, 2, 3, 4	In-flight catering& checked baggage allowance
Services 5, 6, 7, 8	Generic in-flight services
Services 9, 10, 11, 12	Sales & ground services
Services 13, 14, 15	Free special assistance
Services 16, 17, 18	Services at extra cost

Interviewees would weight to these 5 areas in percentages, while Services 19 to 30 are only suggested ancillary services, so no values assigned.

##### 4.6.1 GAP 5 Analyses with the Values

The GAP 5 score would be computed and they are depicted in the following sub-sections. SERVQUAL weight score of two groups will be presented in Appendix XI, SERVQUAL Value of Leisure Traveller will be presented in Appendix XII and XIII.

Since there is without existing services for 19 to 30, the perception and expectation value would be empty. Furthermore, the similar justification for the classification in Table 2 would be presented here. For the sake of completeness, only the items with expected values are compared in the correlation tests. According to the correlation values, the results can be summarized in the following table.

	<b>Proposed Classification</b>	<b>Gender</b>	<b>Age</b>	<b>Purpose of travelling</b>
Average rho value	<b>0.7849</b>	0.8512	0.5656	0.5511
Average p-value	<b>0.0001</b>	0.3210	0.2312	0.1214

	<b>Who picked the airline</b>	<b>Average time of flight (hrs.)</b>	<b>Times of travelling in 3 yrs.</b>	<b>Class travelled</b>
Average rho value	0.8552	0.2510	0.8991	0.8190
Average p-value	0.0365	0.0621	0.0122	0.5612

Table 2: Correlation Tests for the grouping methods (Kano Model)

Only three of them, namely proposed classification ( $\rho = 0.7849$ ,  $p = 0.0001$ ), “who picked the airline” ( $\rho = 0.5552$ ,  $p = 0.0365$ ) and “times of travelling in 3 years” ( $\rho = 0.8991$ ,  $p = 0.0122$ ) are considered a statistically significant with the p value less than 0.05, and out of them the proposed classification provides the least correlation between groups. Hence, the largest implication would be deduced.

#### 4.7 Importance-Performance Analysis (IPA)

Finally, the importance-performance coordinates would be calculated and plotted accordingly to reveal the priority of the services to be implemented. The following sub-sections, it is observed that there are difference required services for the individual groups.

Based on the result obtained and purified, some suggestions and implications can be suggested to CX for the improvement of profitability and maintaining the competitive edge. In the following chapter, we would generate our analysis and advices from the results obtained in this chapter.

## 5. Analysis and Evaluations

In this chapter, the analysis and interpretation of the obtained data would be depicted. With the assistance of the predefined customer satisfaction and the related tools, namely, Kano model, SERVQUAL dimension and IPA, the suggestions can be generated to CX for the enhancement of their airline services.

### 5.1 Interpretation with Kano model

In this section, we would adopt the tools of Kano model to evaluate the suggested services with the evidence extracted from the survey. In this section, the services would be classified as five groups including “Attractive” services, “One-dimensional service”, “Must-be” service, “Indifferent” services, and “Reserved” and “Questionable” services.

#### 5.1.1 “Attractive” services

The “Attractive” services, which are the most important items to be included in the future airline services, can be seen in the following table.

Leisure Traveller	Business Traveller
7. in-flight newspapers	7. in-flight newspapers
8. in-flight personal amenities	8. in-flight personal amenities
9. on-board duty-free sale	9. on-board duty-free sale
15. connecting flight	14. special baggage handling
18. extra legroom	15. connecting flight
19. order food	16. airport lounge
22. in-flight shower	18. extra legroom
25. no catering award	19. order food
26. no checked baggage reward	21. message chairs
27. watch in-flight advertisements	22. in-flight shower
28. questionnaires	24. priority check-in
29. online check-in award	25. no catering award
	26. no checked baggage reward
	29. online check-in reward

There are 12 and 14 ancillary services are considered “attractive” to the leisure and business travellers respectively. The more functional of these services are, the happier the customers are. However, the customers will not turn dissatisfied even if these services do not exist.



Both or Leisure and business travellers also consider that 5 existing CX ancillary services – **item 7, 8, 9, 15 and 18** are “attractive”. Leisure travellers shares the similar preference with business traveller in-flight newspapers, magazines and personal amenities especially during long haul flight. However, CX already stopped to provide in-flight magazines and personal amenities to economy class. Regarding to the on-board duty-free sale, the results show that CX’s marketing strategy on selling of duty-free item in-flight seems to be appropriated; it is expected that more items will be able to attract more sale and higher customers’ satisfaction.

For the connecting flight, it is obvious that more destinations and comprehensive network will be benefited to customers in no doubt. It is the most valuable asset for CX, as a flag network carrier in Hong Kong to sustain competitive edge over other national airlines under the protection of the bilateral aviation negotiation and international air service agreements (ASAs) (Law & Yeung, 2000). And it is also the greatest difference with low cost carriers.

It is interesting to note that both leisure and business travellers also want extra legroom but most of them also do not recognize the price of the designated seat provided by CX, i.e. US\$100 or 20,000 Asia mileage and US\$25 or 5,000 mileage for long and short haul flight respectively.

The **item 14 and 16** are also considered as “attractive” by business travellers. Prior check-in services which would allow them to check-in their baggage prior they approach to the check-in counter at HKIA. It is also revealed that they also prefer a comfort airport lounge for relaxation or take a short break before getting into the plane and dealing with their business in-flight or after flight.

The best part of Kano model lies within this particular category because any suggested services that fall into this category are of high potential to be brought into real implementation. They are services that are non-existing, but their existences are able to boost customer satisfactions. Detailed recommendations with evaluations for the suggested “attractive” ancillary services by both of leisure and business travellers, i.e. **item 19, 22, 25, 26 and 29** will be analysis in chapter 5.

To leisure travellers, **item 27 and 28** are the “attractive” ancillary services that CX may bring into real life.

For the obtaining rewards from watching in-flight advertisement, CX’s passengers may earn themselves rewards by watching third party commercials or advertisement of duty-free items on the personal entertainment system on-board. CX gets paid by advertising companies or business bodies for showing its customers commercials and share a part of the profit earned with them through rewards or discounts on duty-free items.

Similarity, for the getting rewards with questionnaires, CX’s passengers have to fill in questionnaires or surveys about some third party services or products. Again CX gets paid by the conductors of the questionnaires and surveys and share some of the profits with its customers.

Business travellers, on the other hand, suggest that **21 and 24** are “attractive” should CX provide them.

For the on-board massage chairs, it is expected that this service is a great way of relaxing or loosening muscle cramps caused by the limited cabin space. Time slots can be booked pre-flight or in-flight with the flight attendants.

For the priority check-in, embark and disembark, this is relatively simple and involves fewer resources but yet it may be crucial for some business traveller and frequent flyers. No one would like to wait in long lines when they can spare the time to make a few phone calls back to the office for some last-minute business arrangements or scan through the proposals that they are going to have meetings about when they get to their destinations.

### 5.1.2 “One-dimensional” services

The proposed “One-dimensional “services from the leisure and business travellers are indicated in the following table.

Leisure Traveller	Business Traveller
13. in-flight special assistance	5. in-flight personal entertainment system
17. in-flight Wi-Fi	
23. seating preference	

The business travellers reckon that **item 5** is a “One-dimensional” service. The level of their satisfaction is directly proportional to how much it is fulfilled.

In terms of CX’s existing ancillary services, leisure traveller consider **item 13, 17 and 23** as “One-dimensional”, it may be due to certain leisure traveller more desire on seating with their family and looking after their children during the flight, so they want more choices on selecting the seats for them and their children or elderly. In the meantime, they also need more assistance would be provided on taking care of their family. On the other hand, they also wish to use Wi-Fi in-flight for connecting with their family, friends or boss during vacation if the charges could be reduced. For the business traveller will be more satisfied if CX provides more entertainment system CX provides in-flight, the more satisfied its customers are.

### 5.1.3 “Must-be” services

The following table summarizes the “Must-be” service for the two groups of passengers.

Leisure Traveller	Business Traveller
<b>1. in-flight meals</b>	<b>1. in-flight meals</b>
<b>2. in-flight beverages</b>	<b>2. in-flight beverages</b>
<b>3. in-flight refreshments</b>	<b>3. in-flight refreshments</b>
<b>4. checked baggage allowance</b>	<b>4. checked baggage allowance</b>
5. personal entertainment system	<b>10. counter check-in</b>
<b>10. counter check-in</b>	<b>11. agency ticketing system</b>
<b>11. agency ticketing system</b>	17. in-flight Wi-Fi
	20. pre-order newspapers

Both leisure traveller and business traveller consider **item 1, 2, 3, 4, 10** and as “Must-be” services. These are services that keep them away from being “dissatisfied”. Their satisfactions do not rise above natural even if there are high performances in these services. They will be extremely dissatisfied if these requirements are not fulfilled. The reason for both of leisure and business travellers choosing CX is its reputation on providing excellent in-flight and ground services. Therefore, CX should never charge its passengers for these ancillary services or reduce the service quality for these ancillary services. However, it is noted that less percentage of business traveller rated in-flight meal (**item 1**) as must need item, it may be due to business traveller are more time sensitive and they should have more experience on air trip, conversely, leisure traveller are more focus on enjoyment, and should have less air trip experience, so they may more enjoy on in-flight meal.

Apart from the above-mentioned services, business traveller also suggests **item 17 and 20** are “Must-be” services to them. As the business traveller are mostly travelling for business,

in-flight Wi-Fi internet connection is become crucial for them to keep connected to the world, while pre-ordered newspapers and magazines can update them with current affairs and latest business. Again, these services must be there should CX does not want to make its passengers, business travellers to be exact, dissatisfied.

It is interesting to note that there are no “Must-be” requirements for the “suggested ancillary services”. It is actually consistent with the actual world as, if there was an ancillary service that belonged to “Must-be” category, it would not be “non-existing”.

For the leisure traveller, they also suggested **item 5** is “Must-be” service to them. It may be due to the fact that they are more concern on in-flight experience and enjoyment and the entertainment system is essential for comforting their child.

#### 5.1.4 “Indifferent” services

The service falls into the category of “Indifferent” services would be observed from the following table.

Leisure Traveller	Business Traveller
<b>6. in-flight magazine “Discovery”</b>	<b>6. in-flight magazine “Discovery”</b>
<b>12. CX holidays</b>	<b>12. CX holidays</b>
14. special baggage handling	13. in-flight special assistance
16. airport lounge	23. seating preference
20. order newspapers	27. watch in-flight advertisement
21. message chairs on-board	28. questionnaire
24. priority check-in	<b>30. buy ticket from CX</b>
<b>30. buy ticket from CX</b>	

There are lot of ancillary services fall into this category (8 items for leisure traveller and business traveller), meaning that lot of services are not importance to the customers.

**Item 6, 12, 14, 16** are the CX’s existing ancillary services in which leisure traveller are not interested, while **item 6, 12** and **13** are the current CX ancillary services that business travellers are neither satisfied nor dissatisfied with no matter they are dysfunctional or fully functional.

Meanwhile, leisure traveller find 4 suggested ancillary services, which are **20, 21, 24** and **30** – “indifferent” while business travellers reckon that 4 other suggested ancillary services – **item 23, 27, 28** and **30** – “indifferent”. It shows that their opinions on these suggested ancillary services are quite different from those of people who came up with the suggestions.

### 5.1.5 “Reversed” and “Questionable” services

It is found that neither CX’s current ancillary services nor suggested ancillary service to CX is reversed or questionable. However, it is revealed that leisure traveller and business traveller have different opinions in 16 out of 30 ancillary services, meaning that they have more thoughts different than in common. The phenomenon can well be explained by the fact that they have different needs when they travel due to their different purposes of travelling. For example, **on-board duty free sale (item 9)** are more concerned by leisure traveller than by business traveller. It is also noted that few leisure and business travellers had complaint against the duty-free services and they expressed that selling of duty-free on-board are disturbing their rest or sleep.

### 5.2 Analysis to SERVQUAL Dimension

The following table summarizes the ancillary services which obtained the high Gap 5 score smaller than -0.3 for the two groups of passengers.

Leisure Traveller	Business Traveller
3. in-flight refreshments	1. in-flight meals
<b>4. checked baggage allowance</b>	<b>4. checked baggage allowance</b>
<b>5. personal entertainment system</b>	<b>5. personal entertainment system</b>
<b>7. in-flight newspapers and magazines</b>	<b>7. in-flight newspapers and magazines</b>
<b>9. in-flight duty-free sale</b>	<b>9. in-flight duty-free sale</b>
<b>11. agency ticketing system</b>	<b>11. agency ticketing system</b>
<b>15. connecting flight</b>	14. special baggage handling services
	<b>15. connecting flight</b>

For **item 3**, it is noted that leisure traveller expected that CX provides better in-flight refreshment in between the meals services may be due to part of the respondents travelling with their children or they are unable to sleep in-flight especially during long haul flight. Therefore, they or their children might feel hungry in the midnight and required to consume night foods or snake in between meals services.

Regarding to **item 4, 5, 7, 9, 11** and **15**, both of leisure and business traveller might also believe that CX, as a traditional full-service airline should provide those ancillary services to them for free. However, it is revealed that CX already adopted the similar approach of network carriers all over the world and reduce the free checked baggage allowance. CX also

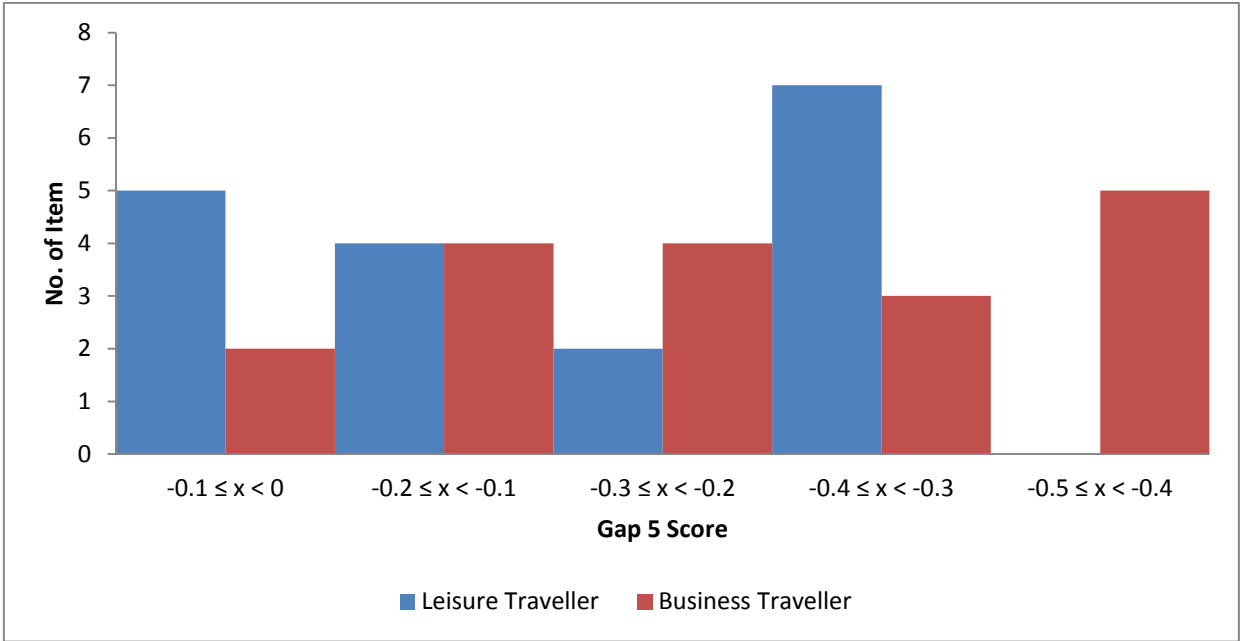
no longer provided free magazines to its EY passengers. It is expected that customer satisfaction may also be dropped in return. Fortunately, CX eager to improve and promote in-flight entertainment, offer more popular duty-free items and introduce preflight duty-free online shopping and home delivery services as well as explore and launch more new destinations to its customers in order to retain customers' loyalty. It is also revealed that the customers not only require more ancillary services but also desire better quality of the services.

For the **item 1**, it is noted that business traveller are expecting better in-flight meals than leisure traveller, the facts may be due to the most of the business travellers are frequent flyers and they might be the diamond card members of CX's Marco Polo Club or an Oneworld's Emerald members and they might be upgraded very often. Consequently, they used to enjoy upgraded in-flight services or prefer better in-flight meal. However, they are also willing to give up in-flight meals for rewards according to the result from **item 25**, no in-flight meals, it may be due to the air trip is too short or the meals services are out of normal dining hours.

For **item 14**, business travellers are more desirous to use special baggage handling services than leisure travellers, the reasons behind may lie on the fact that they wish to check in their baggage prior preparing for the meeting with their business partners aboard. Low gap 5 score may be due to they are dissatisfying with the available locations of urban check-in services or the choices of the services offered by CX.

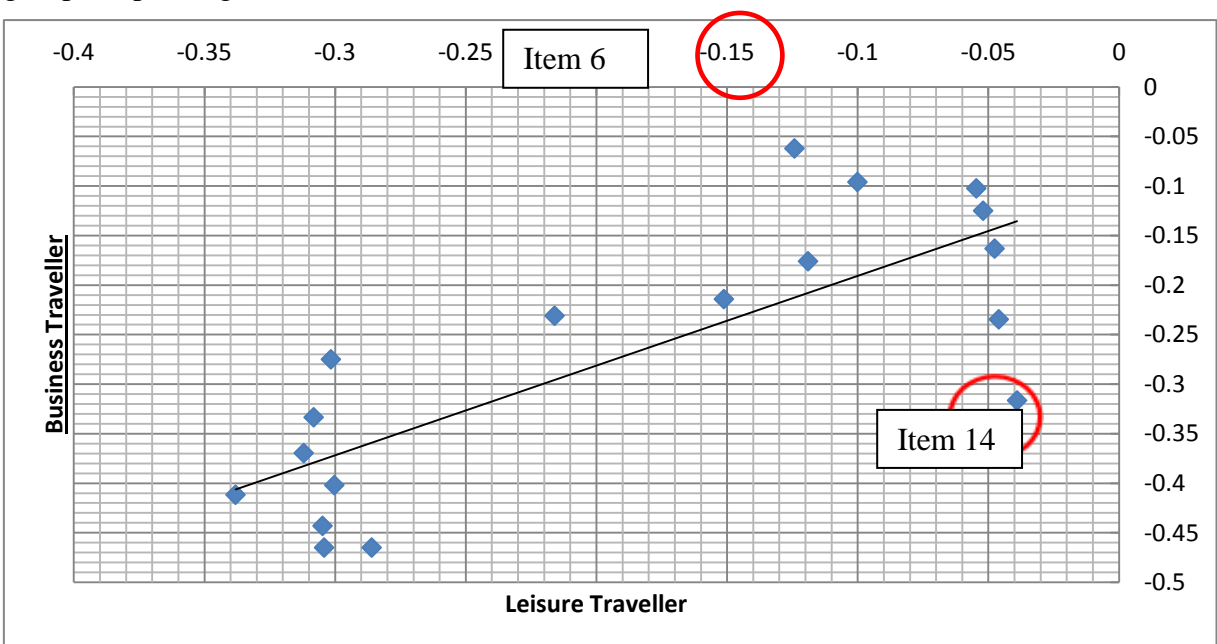
### **5.2.1 Analysis on Gap 5 Score**

In this section, we provide the analysis of the result from the Gap 5 score for the existing ancillary services. The following diagram shows the distribution of the marks for the number of items fallen, and it is observable that most of the existing services are below the expectation of the customers, in both leisure traveller and business traveller groups.



The average scores are  $-0.1892$  and  $-0.2714$ , while the standard deviations are  $0.1167$  and  $0.1347$  for leisure traveller and business traveller respectively. The result shows that the leisure traveller with lower expectation on the services, while the business travelers tend to have more requirements. Also, the diversification of the scores from the business traveler means that there are roughly with the average, while the relatively concentration of the score means that all the services are wide range of scores given.

In addition, correlation test is included to evaluate the opinion to the services from the two groups of passengers.



The correlation test for the percentage of two groups are inclusive ( $\rho = 0.7849$  and  $p = 0.0001$ ). However, from the high positive correlation between the two groups, we know that there are similar expectations for the two types of passengers. It is also worthy to note that item 14 special baggage handling (-0.039, -0.3165) and item 6 in-flight magazine "Discovery" (-0.1242, -0.0621) are out of the trend, and hence they are the difference of the expectation for the two groups of passengers.

### 5.3 Interpretation with IPA

In this section, we would analyse the results obtained from the survey with the IPA. Similar to the previous section, we would classify the analysis into two groups of leisure traveller and business traveller in the following sub-sections.

#### 5.3.1 Interpretation of IPA Value of Leisure Traveller

The figure shows the importance versus performance for the leisure traveller will be presented in Appendix XIV, and the close look on the items of service would be suggested for CX.

As illustrated in the above graph, the 18 CX's existing ancillary services can be categorized into three groups as follows, according to leisure traveller:

##### **"Concentrate here" (high importance, low performance):**

Four items are classified as "Concentrate here" (high importance, low performance), and they are listed as follows:

5. In-flight personal entertainment system
7. In-flight newspapers and magazines
9. On-board duty-free sale
11. Agency ticketing system
15. Connecting flight

The above 5 CX's current ancillary services are of high importance to the leisure travellers. The result agrees well with the Kano model and SERVQUAL dimension, in which **item 5** and **9** are "Must-be" attributes while **item 7, 9** and **15** are "Attractive" attributes. All 5 items also obtained higher than 5 marks in importance. These highly important service attributes are



however poorly functioned according to the perceptions of leisure travellers. The services thus need to be offered with more attention or the passengers would be dissatisfied.

**“Keep up the good work” (high importance, high performance) :**

For the services that listed under the category of “Keep up the good work” (high importance, high performance), there are six items, and they are included in the following list.

1. In-flight meals
2. In-flight beverages
3. In-flight refreshments
4. Free checked baggage allowance
10. Counter check-in
13. In-flight special assistance
17. In-flight Wi-Fi internet connection / satellite phone / fax service

The **item 1, 2, 3, 4 and 10** are found to be important in IPA. That is totally compromising with the results interpreted by Kano. However, the results for **item 13 and 17** are inconsistently in IPA and Kano models. Kano model says that they are “one dimensional” but IPA indicates that they are important. This may be explained by the fact that the dominances of the Kano group for these 2 services are not strong enough. With such close results within the Kano model, it is not surprising that the outcomes may not agree with those that are obtained by using other models, like IPA.

According to IPA, these 7 CX’s existing ancillary services are considered important by the leisure traveller; they also think that CX has been doing a great job in these services. All CX has to do with these services is to “**keep up the good work**”, or its customers would become very unhappy.

**“Low priority” (low importance, low performance):**

For the list of “Low priority” (low importance, low performance), it includes eight services as follows.

6. In-flight magazine “Discovery”
8. In-flight personal amenities
14. Special baggage handling
16. Premium airport lounge
18. Seats with extra legroom

The above 5 CX’s current ancillary services are classified by the leisure travellers as “Low priority” using IPA. It means that they are of low importance, and although they are thought to be under-performed, the leisure travellers do not seem to bother at all simply because they do not care.

3 out of the 5 services match with those obtained by Kano model. The two that contradict with the results of Kano model are **item 8** and **18**. Again, the contradictions may be due to the fact that the dominances in Kano model are not sharp enough. If we take a look at personal amenities (**item 8**), we can see that the dominant group is “Attractive” and the percentage of count is (44.6%), which is only a few percentages more than that of “indifferent” (43.5%).

For the analysis with IPA, it suggests that CX should pay low priority to these 5 ancillary services, while it would be worthy to notice that there is one service, **CX holiday (item 12)** that falls into the “Possible overkill” quadrant in the analysis to leisure traveller.

### **5.3.2 Interpretation of IPA Value of Business Traveller**

Similar to the previous section, we would perform the analysis to the business travellers, and the figure summarizes the relationship of importance and performance will be presented in Appendix XV.

#### **“Concentrate here” (high importance, low performance):**

For the quadrant of “Concentrate here” (high importance, low performance), it includes eight services, and they are presented in the following list.

5. In-flight personal entertainment system
7. In-flight newspapers and magazines

9. On-board duty-free sale
11. Counter check-in
12. CX holiday
14. Special baggage handling
15. Connecting flight
16. Airport lounge

The above 8 CX's current ancillary services are of high importance to the business travellers, according to IPA. The general result agrees with the Kano model and SERVQUAL dimension, in which **item 11** is "Must-be" attributes, while **item 7, 9, 14, 15** and **16** are "Attractive" attributes. Except item 16, all 7 items also obtained higher than 5 marks in importance. However, the **CX holiday (item 12)** contradict with the result obtained by Kano model and SERVQUAL. It is an "indifferent" service according to Kano model and relatively low expectation based on SERVQUAL, but it is now of high importance according to IPA. The awkward situation may be a result of unclear categorization within Kano model. Kano model indicates that it is an "Indifferent" service with 60.7% of count percentage. For the **airport lounge (item 16)**, its respective Gap 5 score is  $-0.1632$ , it means that business travellers are satisfying with this service provided by CX in general. Though there is a slight coherence issue, these 8 ancillary services should still be paid attention to as they are highly important from the business travellers' points of view but poorly functioned by CX.

**"Keep up the good work" (high importance, high performance):**

Six items of services are categorized as **"Keep up the good work"** (high importance, high performance), and they are itemised here.

1. In-flight meals
2. In-flight beverages
3. In-flight refreshments
4. Free checked baggage allowance
10. Counter check-in
17. In-flight Wi-Fi

All of the 6 CX's existing services that fall into this quadrant agree with the results obtained by Kano model. They are categorized into "Must-be" in Kano model, which suggest that they are of certain importance, and they are all important to the business travellers in IPA. Fortunately, they are all perceived as well-performed. CX simply needs to keep up its good work with these services.

**"Low priority" (low importance, low performance):**

With the title of "Low priority" (low importance, low performance), four items are being inclusive, and they are depicted for the following item list.

6. In-flight magazine
8. In-flight personal amenities
13. In-flight special assistance
18. Seats with extra legroom

Basically, these ancillary services are considered by the business travellers as "Low priority" according to IPA. It means that they are of low importance and they are also not properly executed. Since the passengers do not have much concern for these services, CX should therefore focus its resource on the other issues.

There are, however, quite a lot of discrepancies here when considering its coherence with Kano model. Kano model suggests that **item 8** and **18** are important to the business travellers to different degrees. The discrepancies may lie in the fact that the count percentages in Kano model are pretty close. For instance, **in-flight personal amenities (item 8)** is 35.7% "Attractive" and 32.1% "Indifferent" and **seats with extra legroom (item 18)** is also 35.7% "Attractive" and 32.1% "Indifferent". The differences are merely a few percentages.

**"Possible overkill" (low importance, high performance):**

IPA suggests that there are several items are classified as "Possible overkill" (low importance, high performance), with respected to leisure traveller and business traveller within this survey, but there is without item belonging to both of leisure and business traveller. As there are more than half of the interviews considered that it is not important, it is recommended that CX may

reduce the resource on providing those services or limited to the customers with special request in advance.

Leisure Traveller:

## **12. CX holiday**

As mentioned earlier, leisure traveller and business traveller do not share the same view when it comes to airline services simply because they travel for different purposes. While leisure traveller find their interests in enjoyment and fun like premium food and on-board duty-free sale, business travellers, which are most of the time travelling for business, focus their needs on productivity and efficiency. They concern more about **online checking-in, in-flight Wi-Fi connection** or even **connecting flight arrangement**.

With such a big difference in customers' needs, CX should carefully divert its resources, pinpoint its passengers' desires and select the most suitable ancillary services for its customers.

### **5.4 Recommendations for the Necessity Services**

Although the customer showed a strong preference on the provision of certain ancillary services in the survey, it would be possible for them to give up the services to trade-off some reasonable rewards. In this case, the customers show their real necessities for the services, and those services are considered as true necessary services for the customer. In addition, it would be a change of importance of the interviewees if they are forced to select the ancillary services or the rewards.

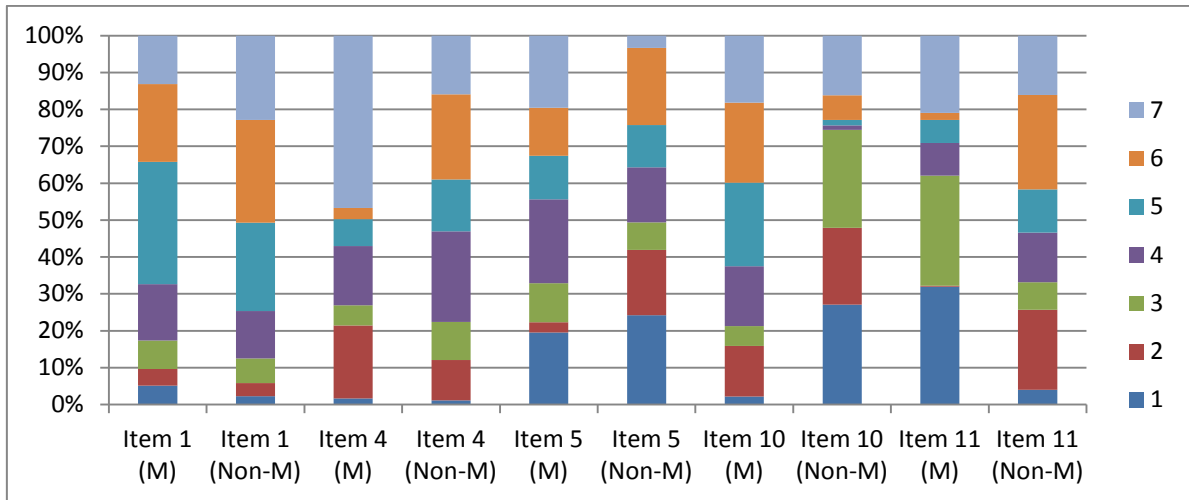
To achieve the goal of addressing the problem, certain statistical calculations are needed, and the steps would be illustrated one-by-one.

First, the pair up should be introduced, namely the item **25** with the item **1**, **26** with the item **4**, **27** with item **5**, **29** with the item **10** and **30** with the item **11**, and the results show as follows:

No.	Questions	Items
25	Not catering services is required on-board	In-flight meals (item 1)
26	Not carrying checked baggage	Checked baggage allowance (item 4)
27	Watching in-flight advertisements by using of in-flight personal entertainment system	In-flight personal entertainment system (item 5)
29	Using online check-in system rewards	Counter check-in (item 10)
30	Purchasing air-ticket directly through CX e-Ticket system instead of travel agencies	Agency ticketing (item 11)

Second, the result from questions 25, 26, 27, 29 and 30 was classified according to two groups, namely group with people find the corresponding service (items 1, 4, 5, 10 and 11) is important (**M group**) and the reminding people (**non-M group**). The percentages with particular marks in Question 25, 26, 27, 29 and 30 were shown in below table and the graphical representation can be seen in figure.

Item No.	Group	Corresponding Marks (%) from the Questions 25, 26, 27,						
		1	2	3	4	5	6	7
1	M	4.22	3.65	6.27	12.45	<b>27.02</b>	17.15	10.70
	Non-M	2.77	4.22	7.87	15.37	28.42	<b>33.25</b>	27.16
4	M	1.72	19.75	5.41	16.13	7.23	3.05	<b>46.71</b>
	Non-M	1.17	10.9	10.38	<b>24.51</b>	14.08	23.05	15.91
5	M	19.52	2.76	10.62	<b>22.77</b>	11.72	13.04	19.57
	Non-M	<b>24.23</b>	17.71	7.46	14.94	11.45	20.83	3.38
10	M	2.16	13.72	5.29	16.18	<b>22.53</b>	21.58	18.14
	Non-M	<b>27.08</b>	20.83	26.52	1.25	1.44	6.69	16.19
11	M	<b>31.92</b>	0.27	29.9	8.78	6.27	1.90	20.96
	Non-M	4.05	21.64	7.45	13.51	11.68	<b>25.58</b>	16.10



Theoretically, the interviewees shown their preference with “Must-be” in Kano model would tend to select high marks in the importance of giving up the service to trade for the reward, while the rest of person would accept the trade-off as they find the service may not be important. Interestingly, from the results, it is observed that none of results show the theoretical result for the acceptance of the services. It means that most of the “Must-be” service is not necessary as they are alterable with some awards.

To evaluate the degree of necessity of the service, some measures have been invented. In ideal case, a customer marked the services as “Must-be”. There is no reason for them to change their mind with the awards provided. As a result, the all the customers in **M** group should be with all answers in part 4 as 7. With similar argument, all the customers from **non-M** group should be with all answers in part 4 should be 1. Then, we can define the alternation factor as the percentage deviation between the real cases and the ideal case. The equation can be expressed as

$$S = \sum_{k=1}^9 (z_i - s_i)^2$$

where S, z and s are the final score, idea percentage and real percentage, respectively. Finally, the table of score can be constructed.

Item No.	M Group	Non-M Group	Attractiveness
1	0.9224	1.2421	0.7426
4	0.3584	1.1577	0.3096

<b>5</b>	0.7796	0.6910	<b>1.1282</b>
<b>10</b>	0.8157	0.6765	<b>1.2058</b>
<b>11</b>	0.8280	1.0963	0.7553

Table 3: Percentage deviation of the preference

The table shows the values for the alternation factors of **M** and **non-M** group for the corresponding item number. For **M** group, the alternation factor means the attraction of the reward, as the reward deformed the selection of user, while the factor for the non-M group means the distraction of the reward, as the high acceptance is diminished with the exiting of the reward. By dividing the factors of **M** group with **non-M** group, the value of attractiveness can be defined. The value  $> 1$  shows that the reward is attractive to the customer, while the value  $< 1$  means they are not welcomed for the reward. From the results, it can be seen that the customers would not trade-off the services for the reward, so using of **in-flight personal entertainment system (item 5)** and **counter check-in (item 10)** are necessary from the customers' point of view.

It is worthy to note that there is no significant difference on the will of trading-off between the M group and non-M group, but the majority of respondents also believed that CX should provide ancillary services for certain. CX should not reduce those services or decrease the services standard without customer's compromising and it should be performed with incentive measures.

Furthermore, with the percentage, analysis can be performed. The independence can be evaluated with the correlation test between the M and non-M group for the particular items.

	<b>Item No.</b>				
	1	4	5	10	11
<b>rho-value</b>	<b>-0.8129</b>	0.2054	-0.0505	<b>-0.8507</b>	<b>-0.8229</b>
<b>p-value</b>	<b>0.0262</b>	0.6587	0.9143	<b>0.0152</b>	<b>0.0230</b>

With the acceptance p-value of  $< 0.05$ , conclusions for item 1, 9, 10 and 30 can be drawn from the table above.



High and positive correlation means that the reward is with similar effect for the M and non-M group. Hence, the service is unnecessary, as it can be trade-off with rewards. It is revealed that **personal in-flight entertainment system (item 5)** is belonged to the low and negative correlation. That means the respondents not willing to watch advertisements instead of watching movie or using these systems even with rewarded. The reason may be lies on the fact that in-flight personal entertainment system is very important to comfort the leisure traveller and their children. However, high negative correlation ( $\rho = -0.8129$ ,  $p = 0.0262$ ,  $\rho = -0.8507$ ,  $p = 0.0152$ , and  $\rho = -0.8229$ ,  $p = 0.0230$ ) for **in-flight meals (item 1)**, **counter check-in (item 10)** and **agency ticket (item 11)**. That means that they are the unnecessary services for the customers, as certain respondents of M-group still willing to trade-off the service, which is opposite to the non-M group respondents.

## 5.5 Further Hypothesis Tests

Here, we construct two more hypotheses to see the suitability for the current services as well as provide comment on them.

**H1: Group M do not willing to trade off the ancillary services as they believed that the ancillary service must-be provided by CX.**

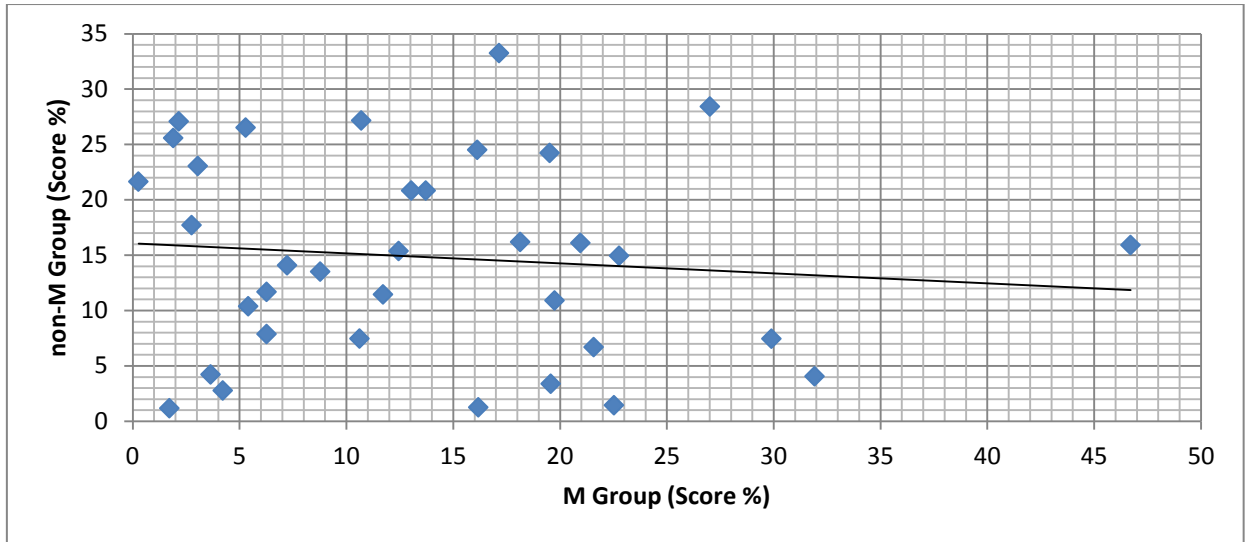
The hypothesis can be deuced with the collected percentages and the ideal percentage for the Group M, which is visualized in Figure 14.

Based on the result for t-test between the idea result (all answers being 7) and the collected result in part 3 (all are with  $\text{Sig} < 0.0001$ ), the hypothesis should be inverted, which is **“Group M willing to trade off the ancillary services even they believed that the ancillary service must-be provided by CX”**.

CX may consider to review new ancillary services and reduce the unpopular ancillary services in shorter time frame to avoid spending too much resource and time for carry out large scale survey. It is because CX may use the ancillary services order records to find out which ancillary services are most popular or trade-off by rewards. Based on the record, CX will be able to adjust the level of rewards to be offered time by time in order to control the ancillary services to be provided during high and low season.

**H2: The interviewees are filling the questionnaire based on their preference.**

The hypothesis can be verified by the correlation test between M group and non-M group. If the interviewees are filling the answers with their preference, there should be a significant negative correlation for correlation of two groups.



However, The result was insignificant correlation between group M and non-M ( $\rho = -0.1032$ ,  $p = 0.5553$ ) when they are forced to select the ancillary services or the rewards, both group also willing to trade-off the ancillary services provided that reasonable rewarding will be granted. It is noted that most of them are changed their mind if they are forced to make a selection, as a result, it is expected that their selection will be the final decision for what they want and it is suggested that CX offer the passenger with rewarding for trading off ancillary services, so that CX will be able to acquire the customer preference more accurate.

Regarding to the use of **online check-in with seat reservation (item 10)** and **buy e-ticket from CX (Item 11)**, it is revealed that both of M or non-M group also willing to use online system provided by CX no matter they are interesting on the using the system or not provided that rewards will be granted. The reason may be lies on the fact that online ticketing and online check-in systems of CX or travelling agents were became more user friendly and sophisticated, more and more customers would like to compare the air ticket price through various online travel agencies and they are able to use advanced seat selection system, online check-in system and buy e-ticket from CX if the system is good enough and the ticket price offered by CX are not higher than other online travel agencies.

It is also expected that many passengers also willing to trade-off checked baggage if they do not need it because they might also want to get more rewards to trade-off other ancillary services or accumulate the points to trade-off additional checked baggage for next travelling or during return journey after shopping. Furthermore, business travellers may be also required to bring back product samples, document etc. Similarly, both leisure and business traveller may also willing to trade off in-flight meal especially during mid-night flight and short flight.

## 5.6 Integrating Kano, IPA and SERVQUAL model:

In this section, the integration for the Kano, IPA and SERVQUAL model are performed. For the current ancillary services, three models have been applied, consequently, and the result showing the attributes for both of leisure and business traveller as below:

### **“Attractive” ancillary services: (Kano)**

- (7) In-flight newspapers
- (8) In-flight amenities
- (9) In-flight duty-free sale
- (15) Connecting flight
- (18) Extra legroom

### **Lowest Gap 5 score (over 3) in SERVQUAL**

- (3) In-flight refreshments
- (4) Free checked baggage
- (7) In-flight newspapers
- (9) In-flight duty-free sale
- (11) Agency ticketing system
- (15) Connecting flight

### **Concentrate Here (IPA)**

- (5) In-flight personal entertainment system
- (7) In-flight newspapers
- (9) In-flight duty-free sale
- (15) Connecting flight

Over the analysis of three models, **items 7 newspapers, 9 in-flight duty-free sale and 15 connecting flight** should be highlighted for further study as those services were rated as most valuable (Must-be) to the customers and greatest development potential (Concentrate here) to CX with largest services gap (the lowest Gap 5 score and the score lower than - 0.3)

For **item 7**, which is in-flight free newspapers and magazines, both leisure and business traveller show interest to the item, and they would like to have a wide range of selection for the type of newspapers and magazines. The appetite aligns with the publication of its in-flight magazine “Discovery” with more frequency and revised style to suit the need and it is evidenced by the low perception, expectation and impotence level. Unfortunately, CX excluded the services recently and they provide limited magazines without charges to business class and first class, but the free newspapers are still included in the service. The frequent fliers of economic class would like to maintain the services of free magazines. To sum up, revision on the in-flight magazine and offering selection of pre-ordered magazines and newspapers are the possible solutions to be implemented.

For the **item 9**, in-flight duty-free, the result is same as **item 7** and **15**, the reasons may be lies on the fact that most passengers are interested to shop in-flight, but the choices are too few, the popular items are out of stock or the price is too high. As Hong Kong is a free port with very few taxes and low tax rate, it is expected that the foreign customers desire to buy duty-free items during ex-Hong Kong journey, or buy cigarette and wine which required Tobacco and Liquor excise duties when they are required to stay in Hong Kong. It is suggested that CX sell more “CX exclusive” items and more high import tax items during inbound flight. Furthermore, CX might be considered to reward its customers who made a preflight order, more rewards will be granted to the customers who made larger amount of the order and made preflight order earlier in order to enhance the availability of popular items and satisfy customers’ needs.

**Item 15 (Connecting flight arrangement)** is with greatest gap because of the lowest SERVQUAL dimension weight of “Free special assistance”. In addition, customers also concern the availability destination and networking of CX. Singapore Airlines (SIA) operates 62 routes, while CX only operates 48 direct flights. Competition set to intensify for airline business as the global trend of service liberalization, abandon bilateral aviation negotiation and unilaterally open skies (Law & Yeung, 2000). As a founder of Oneworld alliance, CX is suggested that not only “**keep up its good work**” to launch new destinations, but also explore more potential airlines to join Oneworld for enriching its network with code sharing to ensure its competitiveness.

Apart from the above 3 items, **items 1, 2, 4 and 10** are also considered as highly important to CX, as those ancillary services are rated as “Must-be” from Kano model, “Keep up the good work” from IPA and low score in Gap 5 from SERVQUAL. It is revealed that both of leisure and business traveller also believed that CX should offer them those services without additional charge, but they are satisfying with the current services standard provided by CX. It is recommended that CX maintains the existing services standard to each passenger and implement rewarding programme in order to encourage the customers to express their willingness on the needs of those service.

The following are the ancillary services attributed to “must-be” and “keep up the good work” items which were rated by both of leisure and business travellers, by integration of both models, it is concluded that **item (1), (2), (3), (4), and (10)** are attributed to essential ancillary services to the passengers.

“**Must-be**” ancillary services: (**Kano**)

- (1) In-flight meals
- (2) In-flight beverages
- (3) In-flight refreshments
- (4) Free checked baggage allowance
- (10) Counter check-in
- (11) Agency ticketing system

**“Keep up the good work” ancillary services: (IPA)**

- (1) In-flight meals
- (2) In-flight beverages
- (3) In-flight refreshments
- (4) Free checked baggage allowance
- (10) Counter check-in

## 6. Recommendations and Conclusions

Recall from the “Attractive” services to be added, we have a list of the service preferred by the two groups of customers, and for the enhancement of readability, we provide the list again in here.

Leisure Traveller	Business Traveller
19. pre-order food	19. pre-order food
21. on-board massage chairs	21. on-board massage chairs
22. in-flight shower	22. in-flight shower
25. no catering rewards	24. priority check-in
26. no checked baggage rewards	25. no catering rewards
27. watch in-flight advertisements	26. no checked baggage rewards
28. questionnaires	27. watch in-flight advertisements
29. online check-in reward	29. online check-in rewards
30. buy e-tickets from CX rewards	

While elaborating the findings by Kano model, it was highlighted that the “Attractive” ancillary services suggested by the leisure traveller and business traveller are of huge importance to CX. The services do not exist for the time-being for CX, but their existence may boost its customer satisfaction and at the same time induce ancillary revenues.

### 6.1 Proposed Ancillary Services to be suggested

The list consists of 16 items of service, except the existing 5 items, which are existing service provided by CX, there are 11 services are belonging to “Attractive” in which, the following 7 ancillary services are welcomed by both of leisure and business traveller, which are **item 19, 21, 22, 25, 26, 27** and **29** to be considered by CX, and the services are listed in the following sections.

#### 6.1.1 Pre-ordered premium food (Item 19)

Leisure travellers suggest that CX may bring some luxurious dishes like abalone or oysters to the in-flight menu. Passengers may pre-order the dishes before their flights and enjoy the delicacies on-board. Extra charges will be imposed. CX can enjoy a new source of income while its customers experience a new on-board dining extravagance.

### **6.1.2 On-board massage chairs (Item 21)**

Suggested by business travellers, this service is a great way of relaxing or loosening muscle cramps caused by the limited cabin space. Time slots can be booked pre-flight or in-flight with the flight attendants. Again, CX collect extra charges per usage.

### **6.1.3 In-flight Shower facilities (Item 22)**

This service is recommended by both leisure traveller and business traveller and is needed by many people, especially those that are taking long haul flights. Due to the space and water required for a shower, CX is required to carry out major alternation to its existing passenger aircraft by deploying of advanced technology and equipment or acquire new generation aircraft, A380 in order to provide showering facilities 40,000 feet above ground. Heavy charge on enjoying a shower on-board may be resulted.

### **6.1.4 No In-flight Catering Services Rewards (Item 25)**

So much for the charging services and let's moves to the next category of services. It is some leisure travellers' wish to get lower air fares, extra mileages or other rewards for giving up some services that they normally have with full-fare tickets. One of the services must be in-flight meals. CX may offer choices to its passengers and they have to make the choices pre-flight. In return, CX have to offer some kinds of rewards back.

### **6.1.5 Bonus for without Checked Baggage (Item 26)**

This service is again suggested by both leisure traveller and business traveller. The following are the principles behind:

- It is expected that majority of the leisure travellers are travelling with their family or friend and they are not required to carry lot of luggage for travelling but maybe with additional baggage during return journey. Therefore, they would be willing to check less baggage during ex-Hong Kong journey and accumulated certain rewards for trade-off of additional checked baggage during return journey or trade-off or their favour ancillary services.
- As time-related factors are the most important element to the business travellers, they



might have no time to go shopping after business trip, so checked baggage allowance might not be important for them especially rewards will be granted.

- For the business travellers, as they do not required to pay for the air ticket fees, they might wish to be accumulated rewards for themselves for trade-off additional ancillary services during their private journey in the future.

Regarding to the CX, the advantages are as follows:

- According to the regulation from ICAO, standard weight per passenger including all of his/her personal belonging are 90kg (ICAO, 2011) or 170 pounds per passenger based on the FAA requirement (FAA, 2004). If the passengers have no checked baggage, the aircraft will be able to use less fuel with the decreased burden, and the operating cost on fuel and baggage handlers will also be reduced.
- CX should use the belly space of passenger flight to carry air cargo with high value or express mail to expand their revenue.
- As more belly space of passenger flight is expected to be vacated, if part of passengers have no checked baggage. CX can handle more air freight with its air-freighter at the same volume. As a result, fleet planning will become flexible, and CX might adjust the rewards for checked baggage allowance to tune the air freight demand time by time.
- As there are some restrictions on deploying belly space of passenger aircraft to carry air freight on certain aircraft types, CX is required to revise its fleet planning or flight plan on parts of their routes.

#### **6.1.6 Obtaining Rewards from Watching In-flight Advertisement (Item27)**

On the other hand, CX's passengers may earn themselves rewards by watching third party commercials or advertisement of duty-free items on the personal entertainment system on-board. CX gets paid by advertising companies or business bodies for showing its customers commercials and share a part of the profit earned with them through rewards or discounts on duty-free items.

### 6.1.7 Rewarding from Online Check-in (Item 29)

Checking-in online can greatly reduce CX’s labour at the check-in counters and in turn reduce operation costs. The saved cost is then partially shared with CX’s passengers. The passengers not only accept high-tech travel options, but also demand for more opportunities to take control of their experience (The International Air Transport Association, 2007). More than half respondents expressed that self-service is part of full-service expectations and provided them greater convenience and more options to control their travel experience.

It can be seen that the above 9 suggestions to CX can be divided into two big categories, with one that passengers have to make extra payment for extra services and another one where passengers get different rewards for not consuming normal services or performing extra tasks. In either ways, CX and its passengers will be benefited.

## 6.2 Implementation Recommendations

In the following parts, we would work out the schedule for the implementation of those services with the backup of the survey data obtained. With the collected data, we can generate the Kano Model with the suggested service, and the number of people for each catalogue, namely, Q, A, O, I, R and M would be presented in the following table.

	Q	A	O	I	R	M
<b>19. pre-ordered premium food</b>	<b>0</b>	<b>48</b>	<b>30</b>	<b>24</b>	<b>4</b>	<b>14</b>
<b>21. on-board message chairs</b>	<b>0</b>	<b>32</b>	<b>24</b>	<b>50</b>	<b>6</b>	<b>8</b>
<b>22. in-flight shower</b>	<b>0</b>	<b>46</b>	<b>31</b>	<b>31</b>	<b>1</b>	<b>11</b>
<b>24. priority check-in &amp; boarding</b>	<b>0</b>	<b>17</b>	<b>14</b>	<b>46</b>	<b>31</b>	<b>12</b>
<b>25. no catering reward</b>	<b>0</b>	<b>58</b>	<b>13</b>	<b>19</b>	<b>0</b>	<b>30</b>
<b>26. no baggage reward</b>	<b>0</b>	<b>35</b>	<b>4</b>	<b>50</b>	<b>3</b>	<b>28</b>
<b>27. watch in-flight advertisements</b>	<b>0</b>	<b>38</b>	<b>27</b>	<b>27</b>	<b>10</b>	<b>18</b>
<b>28. fill questionnaires rewards</b>	<b>0</b>	<b>43</b>	<b>17</b>	<b>37</b>	<b>10</b>	<b>13</b>
<b>29. online check-in reward</b>	<b>0</b>	<b>88</b>	<b>0</b>	<b>24</b>	<b>0</b>	<b>8</b>
<b>30. buy ticket from CX rewards</b>	<b>0</b>	<b>30</b>	<b>1</b>	<b>62</b>	<b>0</b>	<b>27</b>

With the statistics captured, we can generate the correlation table as follows. The reddish numbers suggest that the rho values are with p-value < 0.05, which is our predefined acceptance rate.

<b>rho</b>	<b>(19)</b>	<b>(21)</b>	<b>(22)</b>	<b>(24)</b>	<b>(25)</b>	<b>(26)</b>	<b>(27)</b>	<b>(28)</b>	<b>(29)</b>	<b>(30)</b>
(19)	1	0.704	0.98	0.161	0.845	0.545	0.967	0.868	0.814	0.423
(21)	0.704	1	0.82	0.693	0.461	0.795	0.789	0.888	0.512	0.808
(22)	0.98	0.82	1	0.267	0.775	0.617	0.963	0.903	0.764	0.529
(24)	0.161	0.693	0.267	1	0.001	0.587	0.356	0.55	0.106	0.649
(25)	0.845	0.461	0.775	0.001	1	0.651	0.811	0.776	0.898	0.494
(26)	0.545	0.795	0.617	0.587	0.651	1	0.656	0.827	0.589	0.98
(27)	0.967	0.789	0.963	0.356	0.811	0.656	1	0.909	0.737	0.549
(28)	0.868	0.888	0.903	0.55	0.776	0.827	0.909	1	0.828	0.755
(29)	0.814	0.512	0.764	0.106	0.898	0.589	0.737	0.828	1	0.453
(30)	0.423	0.808	0.529	0.649	0.494	0.98	0.549	0.755	0.453	1

<b>p-value</b>	<b>(19)</b>	<b>(21)</b>	<b>(22)</b>	<b>(24)</b>	<b>(25)</b>	<b>(26)</b>	<b>(27)</b>	<b>(28)</b>	<b>(29)</b>	<b>(30)</b>
(19)	0	0.118	0.001	0.761	0.034	0.264	0.002	0.025	0.049	0.403
(21)	0.118	0	0.046	0.127	0.357	0.059	0.062	0.018	0.299	0.052
(22)	0.001	0.046	0	0.609	0.07	0.192	0.002	0.014	0.077	0.281
(24)	0.761	0.127	0.609	0	0.998	0.221	0.488	0.258	0.842	0.163
(25)	0.034	0.357	0.07	0.998	0	0.161	0.05	0.07	0.015	0.319
(26)	0.264	0.059	0.192	0.221	0.161	0	0.157	0.042	0.219	0.001
(27)	0.002	0.062	0.002	0.488	0.05	0.157	0	0.012	0.094	0.259
(28)	0.025	0.018	0.014	0.258	0.07	0.042	0.012	0	0.042	0.083
(29)	0.049	0.299	0.077	0.842	0.015	0.219	0.094	0.042	0	0.367
(30)	0.403	0.052	0.281	0.163	0.319	0.001	0.259	0.083	0.367	0

The high values suggest that there are close relationship between two services in term of the user satisfaction, so it would better to implement them in batch. With the pre-set threshold value of  $\rho = 0.85$ , which means that we consider they are relate when the correlation is  $> 0.85$ , and the  $p\text{-value} < 0.05$ , we can generate the relation figure as follows, where the ones indicates the relations between two items. In Figure 15, we have better idea on the dependence of the services.

	(19)	(21)	(22)	(24)	(25)	(26)	(27)	(28)	(29)	(30)
(19)	0	0	1	0	0	0	1	1	0	0
(21)	0	0	0	0	0	0	0	1	0	0
(22)	1	0	0	0	0	0	1	1	0	0
(24)	0	0	0	0	0	0	0	0	0	0
(25)	0	0	0	0	0	0	0	0	1	0
(26)	0	0	0	0	0	0	0	0	0	1
(27)	1	0	1	0	0	0	0	1	0	0
(28)	1	1	1	0	0	0	1	0	0	0
(29)	0	0	0	0	1	0	0	0	0	0
(30)	0	0	0	0	0	1	0	0	0	0

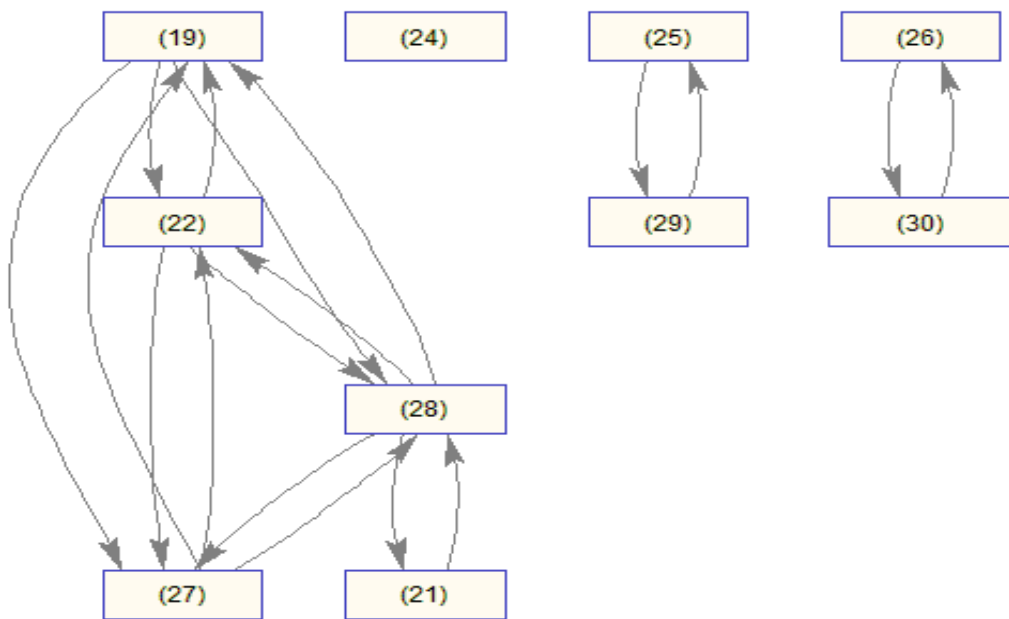


Figure 15: Graphical Representation of the Dependence of Services

Expect the **item 24, 25, 26, 29** and **30** all the services are interconnected, and it is advisable to implement those services into four clusters, and the suggested proposal would be:

Cluster	Services
Cluster A	(24)
Cluster B	(25), (29)
Cluster C	(26), (30)
Cluster D	(19), (22), (27), (28)

The implementation of unbundled ancillary services should be conducted in phases. During the first phase, CX may be considered to introduce a new rewarding program to replace the Marco Polo member which allows them to transfer their existing credit or points to the new scheme. Each new membership of the new rewarding programme will be awarded with certain credits. CX introduces certain new ancillary services, such as items **19, 20, 24** and **28** which do not require alternating the current services protocol or putting a significant burden on front-line staff for its customers to redeem or credit reward.

During the second stage, CX should introduce the new rewarding programme to its customers with an extra bonus to the new joiner. Participants can select their services by credits gained from giving up unnecessary services. However, it is inadvisable to implement the invented in-flight ancillary services because customer dissatisfaction would be induced due to the seats alternation restriction.

The exclusion of certain existing ancillary services may result in additional operating costs triggered by the reduction in scale of economy, expansion of training costs to the front-line staff, increasing the distribution cost of ancillary services to specific customers. Advanced technology, such as RFID, may be required to apply to unbundled ancillary services because of non-standard services, but those programmes also enable CX to acquire its customers' preferences on new ancillary services programmes more accurately.

During the final stage, once the advanced distribution information technology and training for the front-line staff are ready, the new programme could be launched.

### 6.3 Conclusion

According to the literature reviews and survey, uncertain economic outlook, rising operating costs, tight competition between airlines and decreasing customer loyalty are the major elements increasing the changing pressure of CX.

From the above reasons, dealing with an uncertain economic outlook by selling out aircraft, reducing free baggage allowance or introducing ancillary service charges would adversely affect its corporate image. Moreover, combating with the shrinking fuel price by fuel hedging would be a risky move. Similarly, providing more training, altering crew scheduling and pairing to enhance productivity may result in confrontation from the labour union. However, to

maintain competitive advantage, forming alliance, launching new destinations would be the effective solutions, but the drive of deregulation and open skies policy are still be the major consideration of CX. To enhance customer satisfaction by carrying out marketing survey, improving cabin facilities, renovating airport lounge, introducing more ancillary services would contribute extra cost.

Ancillary services seems the last sort for compensating the revenue. Airlines industry earned over US\$58 billion in 2010 with the services and it contributes to 15% of total revenues of mature market. On the contrast, Asian airlines find that less than 5 % of their revenues are coming from this (Anon, 2010).

Unbundled ancillary services were not well implemented in Asia due to high requirement on information technology and lack of novelty, extra caution should be imposed to avoid the hampering to airlines' image.

Based on the analysis from Kano model, 5 existing and 5 proposed ancillary services are found "attractive" to both travellers. As these service criteria have the greatest influence on how satisfied a customer will be with a given series, it is suggested that CX may consider to reinforce these existing services and try to bring the proposed services into real implementation. Regarding to ancillary services which attribute to "one-dimension" and "must-be" requirement, CX should maintain its service standard and encourage its customer to give-up the services by trade-off of rewards simultaneously at the initial stage.

According to the SERVQUAL dimension, Gap 5 score of 5 current ancillary services are lower than -0.3 for travellers. However, it is revealed that customers' expectation of business traveller are much higher than leisure traveller as Gap 5 score of several ancillary services are lower than -0.4. Therefore, CX should consider to carry out in-depth survey to the business traveller as the survey sample taken from business travellers are insufficient. Simultaneously, it is able to further investigate into the specific ancillary services which are attractive and important but with low preference to them in order to re-capture their customers' loyalty.

Based on the IPA, CX should establish innovative strategy for modifying of these 5 services which also welcomed by leisure and business travellers as it is noted that continuous improvement to in-flight personal entertainment system, on-board duty-free sales, counter check-in services, explore new destinations and connecting flights will be the competitive edge

of CX. Therefore, it is recommended that CX keep track with the customers' preference and its mission on providing the services straight from the heart to its customers.

From the analysis of the 3 models, three existing ancillary services are treasured by both travellers. Furthermore, it is considered that order premium food and several rewards for trade-off unnecessary ancillary services are most attractive to the customers. Therefore, it would be benefited to CX reinforce those 3 current services and introduce new rewarding programme. In addition, it is noted that 2 proposed new ancillary services are found that impractical to be introduced in the current stage, i.e. on-board massage chairs and in-flight shower facilities, but it would be the direction for establishing new ancillary services strategy and for further consideration on specific requirement for fleet planning.

Regarding to the new customized ancillary services, it is necessary to educate the customer about trading-off their unneeded services with the credits, and the more accuracy preference of customers can be obtained.

The implementation of unbundled ancillary services should be conducted in phases in order to focus on the resource for development of new rewarding programme and rewards to its customers whose willing to express their real necessity on the new ancillary services.

#### 6.4 Potential limitations

Project scope should be defined before the implementation, and simplified questionnaire with specific category of interest would be more appropriate because of the regulation of HKIA. Therefore, the questionnaires were filled at the bus terminal of HKIA with the time limit of 8 minutes. The bus schedule was recorded to reserve sufficient time to complete the questionnaire before the respondent embark to the bus.

Insufficient academic journals or reports on the topic is the second difficulty for the project. In addition, as most of the research articles and business reports are classified or required to subscribe, it increases the difficulty of the project.

Originally, SERVQUAL was measured on 5 aspects of service quality by the early nineties, i.e. Reliability, Assurance, Tangibles, Empathy and responsiveness (Zeithaml, Parasuraman, & Berry, 1990). However, there is no comprehensive guideline to categorize the investigated

items into those 5 aspects of service quality. By integration of Importance-Performance Analysis (IPA), it is able to obtain the importance of each attribute for further analysis and does not required to sub-categorize the attribute according to SERVQUAL dimension. It is expected that integration of SERVQUAL and IPA but eliminate the weight scoring to SERVQUAL would be more flexible and simple to investigate more types of services and products which are unable to sub-categorize according to SERVQUAL dimension.

For the comment about hypothesis 2, CX should establish pilot testing programme, the participants will be requested to complete a questionnaire for obtaining their preference on ancillary services prior invited to join the new rewarding programme. The aims of taking the questionnaire is to investigate the reliability and effectiveness of traditional marketing survey. It is also expected that the selection records will be deviated with the result generated from the questionnaire significantly. Consequently, it is suggested that in addition to introduce new rewarding programme for encouraging its customers to trade-off the services which they do not need, CX should keep the ancillary services which attributed to “Must-be” category simultaneously.

## 6.5 Future Study

Submission of the current report to the related party of CX would be expected to acquire the management’s preference as the realization of the project in the proposed phrased might be impractical because of the consideration of human factors. Therefore, the realistic implementation is proposed with reference to the programme.

Apart from investigation into the preference of leisure and business traveller, other combination according to the various demographic classifications or detail investigation into leisure traveller (Tshililo, 2009) can be done to enrich the knowledge.

According to Kano model, must-be requirements are a decisive competitive factor, and if they are not fulfilled, the customer will not be interested in the product at all. However, from hypothesis 1, the majority of respondents also willing to trade-off the items which attribute to “must-be” requirements with certain rewards or compensation, that means there should be other factors behind. It is suggested that development of modified questions in addition to Kano’s question in order to identify the attribution of the factors affecting the responds to the originating questions.



It is suggested that 3 attributes, i.e. “take it for granted”, “core value” and “could be replaced” would be introduced in modified Kano model in order to provide the directions to the researchers for further analysis how to differentiate the inherent nature of the items attributed to “must-be” requirement and in turn establishing a strategy to cope with the various new attributes. It is assumed that “in-flight meals” and “free checked baggage allowance” will be attributed to “could be replaced” attribute, and it could be trade-off by rewards or compensation. Counter check-in services will be attribute to “take it for granted” attribute as it is not possible to eliminate. However, it is expected that customer are willing to use the new arrangement or technology for improved check-in process. Safety record, reputation and customer services are assumed to be “core value” attribute, CX may considers to emphasis and promote safety and “services straight from the heart” to new product or services.

In-depth study on optimizing baggage allowance by introducing of rewarding programme would be performed to evaluate the effectiveness of utilizing belly space of the passenger flight to carry high value air cargo. In addition, it is suggested to introduce checked baggage delivery services to further enhancing customer satisfaction and generate ancillary revenue. Passengers are able to select whether to check in their baggage via normal channel, i.e. HKIA check-in counter, self-bag drop counter or urban check-in counter OR they may order pick up services for picking up their checked baggage up to 24 hours to few hours prior normal check-in time. Conversely, the checked baggage also would be delivered to their hotel or preferred location at the destination port on request. Furthermore, more choice of checked baggage’s size and weight limit would be available to the new baggage delivery services.

Feasibility study of fixed seat arrangement would be performed to investigate the affects of delivering unbundled ancillary services and the expected difficulties to the cabin crews as it is expected that implementation of unbundled in-flight ancillary services would be difficult.

New counter check-in arrangement and improved online check-in system will also be my target of future study, as the new programme not only benefit to the airlines to reduce operating cost of check-in counter, but also improving check in experiences due to reduce time for checking in, baggage mishandling rate, complaint arising from checked baggage over-weight, dispute during queuing up and in turn maximizing customer satisfaction.

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## Appendix

### Appendix I: List of ancillary services provided by the airlines

- More leg room
- Selection of airplane seating (window, aisle, longer leg room, front row...etc.)
- Special Rate on Business class upgrade for early booking.
- On-board duty free sales
- Rebate on using of self check-in system (ticket free, online and direct booking)
- Special or premium meal and wine
- In-flight amenities
- In-flight entertainment
- Fill in Questionnaires in-flight
- In flight newspapers / magazines / books
- Using of in-flight shower and sleeping facilities (A380)
- Special attendance : (medical assistant, elderly, child)
- Advertising (e.g. Roadshow)
- Speed boarding and disembarking
- Use of airport lounges
- Loyalty programme (e.g. Asia mileage, One World and Marco Polo)
- Travel related partners (i.e. car rentals, hotels and travel insurance)
- Late boarding penalty
- Discount on no checked baggage
- Additional and overweight checked baggage discount through online booking
- Unbundle checked baggage with air ticket sales
- Introduce checked baggage delivery services
- Reserves the right to reject unconfirmed checked baggage
- Additional weight limit on carryon baggage fees
- Additional carryon baggage charge

## Appendix II: Lists of low cost strategies being used by Low Cost Carriers

- Faster aircraft turnarounds
- Less congested and remote airports with cheaper landing, navigation and facilities charge.
- Single class
- Lower seat pitch
- Paid catering
- No seat assignment
- Paid in-flight entertainment
- Point-to-point markets only
- Achieving higher crew productivity as no mandatory crew rest for the total flight time less than 8 continuous hours according to ICAO's regulation.
- Low aircraft cost due to large orders of single aircraft type
- Lower cost on maintenance, trainings for the pilot, flight attendant, technician as well as instructor.
- Recruit younger and less experienced pilots with lower salary, and recruit experienced flight attendant to avoid training cost.
- Avoid Global Distribution System air ticket sale (GDS) fees or agents cost by e-ticket system and call centre owned and running by themselves.
- Minimum staffing ratio in-flight.

### Appendix III: Strategies to reduce Operating Cost

- Forming alliance between airlines to provide more connecting flights
- Increase seat densities
- Eliminate first class and rearrange to two class seating configuration
- Minimize crew rest period by better arrangement of flight operating pattern
- Down grade of crew hotel
- Lower salary
- Lower staffing ratios in-flight

## Appendix IV: Group Interview Questions

### **Cathay Pacific Airways (CX) Ancillary Services Survey**

#### **Questions for group interviews**

1. Do you like the idea that you can trade your in-flight meal(s) with bonus points (Asia mileage scheme) when booking the ticket? How much will you trade the meal(s) for?
2. What is your opinion on the current in-flight food and beverage and why?
3. What is your opinion on the current personal in-flight entertainment system (e.g. update, variety, number of channels of *movie*, music and *radio etc.*)? What do you value most about in-flight entertainment?
4. What is your opinion on the in-flight publications and why?
5. What is your opinion on in-flight advertisement activities?
6. What is your opinion on the choices of magazine and newspapers?
7. What kind of seat do you prefer, e.g. extra leg room, aisle, window seat, front, back etc.? How much will you pay for choosing your preferred seat?
8. What is your opinion on special baggage handling services?
9. How much will you pay for the priority baggage check-in or early baggage check-in?
10. What is your opinion on e-ticketing service provided by CX?
11. What is your opinion on online check-in and seat selection service?
12. How much do you think reasonable for using self services (e-ticketing service offered by CX and online check in and bag drop)

13. What is your opinion on special assistance services provided by CX? If yes, how do you feel?
14. What is your opinion on the airport lounge services?
15. What is your opinion on the current CX's frequent flyers or loyalty programme?
16. What is your impression on ordinary LCCs, in term of price, service and quality?
17. Are Cathay Pacific's flight network and schedule frequency affect your choice of airlines?
18. Are Cathay Pacific's flight alliances important to you?
19. How important are airline brand image, safety record, social and environmental responsibility to you?
20. How important is professionalism of flight crew and ground crew to you?
21. Do you think there is a great preference of using ancillary services on short haul over long haul flight?
22. Any other suggestions on new ancillary services or improvement on current ancillary services?
23. What is the most attractive and least attractive ancillary service to you, other than those on questionnaire?
24. What is the most important service provided by the network carriers to you and why? (Ticket exchange flexibility, Better in-flight customer services. etc.)

## 國泰航空公司輔助服務研究調查---團體探討問題

- 1 你預定機票時，如果唔食飛機餐可換領額外飛行里數/獎分，你會唔會有興趣？  
(與航班時間、長短途有關嗎?)你認為咁樣可以幫你慳到幾多機票錢？
- 2 你對機上提供既飲食有甚麼感想/意見？
- 3 你對國泰機上既個人娛樂設備有甚麼意見？(夠唔夠新、種類、電視/收音機頻道夠唔夠多等) 你覺得個人娛樂設備最重要既係嗎？
- 4 您對機上雜誌廣告及國泰印刷品有甚麼意見？
- 5 你對國泰機上廣告有甚麼意見？(廣告雜誌、電視熒幕等)(多唔多?你覺唔覺?)
- 6 您對機上雜誌及報章有甚麼意見？(種類、夠唔夠、放既位置等)
- 7 有得揀座位的話，您會揀甚麼位 (前/後/中/窗口位/走廊位/走火通道)？你肯俾幾多錢去揀你想坐既座位？
- 8 你覺得國泰係行李方面既服務做得好唔好？你有唔見過行李嗎？
- 9 你肯俾幾多錢買行李特別處理服務(行李預先檢查、行李提早存放)？/值幾錢？
- 10 你覺得國泰網上買機票方面方唔方便/做得好唔好？
- 11 你覺得國泰網上預先選位服務方唔方便/做得好唔好？
- 12 你覺得用自助服務(網上購票、網上預辦登機手續和機場自助登機專櫃)既話應該得到幾多少優惠/回贈？
- 13 你有用過國泰既特別協助服務嗎 (長者、孕婦、小童、無成人陪同的兒童乘客、傷病人仕、需藥物照料之人仕)？有既話你有甚麼意見？
- 14 你對國泰機場貴賓候機室服務有甚麼意見？

- 15 你對『亞洲萬里通』及馬可孛羅飛行常客計劃有甚麼意見？(換分方便、可兌換地方夠唔夠多、使用率、會過期等)
- 16 你有冇搭過廉價航空？好唔好坐？可唔可以評論吓佢地既價錢、服務同品質？
- 17 你覺得國泰航空公司之網絡、時間表及班次有冇影響到你選擇航空公司的決定？
- 18 你覺得國泰同航空公司之間既聯盟有冇影響到你？(如轉機網絡、可在聯盟航空公司換飛行里數等)
- 19 一間航空公司既品牌形象、安全紀錄同社會責任對你選擇乘坐航空公司有冇影響？定係價錢平/有位就得？
- 20 一間航空公司既機組人員同空中小姐夠唔夠專業同親切對你選擇乘坐航空公司有冇影響？
- 21 你覺得搭長途同短途提供既輔助服務/自選服務要有甚麼唔同？有冇影響你對輔助服務/自選服務既使用率？
- 22 您對國泰輔助服務/自選服務有甚麼意見？你會建議加多甚麼服務來令你更滿意既呢？
- 23 國泰最吸引你既輔助服務/自選服務係邊項？你覺得最少人用既/你自己唔會用既係邊項？
- 24 你覺得那種傳統航空公司輔助服務最重要？(機票轉換的彈性、較佳機艙顧客服務等)

### Airlines Ancillary Services Survey

I am a final year student of BSc (Hons) in Aviation Management of City University of Hong Kong and Coventry University who is now conducting a survey to identify the needs, perceptions and expectations of customers on ancillary services provided by Cathay Pacific Airways (CX). You are cordially invited to fill in the following questionnaire in order to assist me to have my research product done. I hope this feedback would be improved your air travelling experience in the near future. Your opinion is highly appreciated, thank you.

<b>PART I Current Ancillary Services of CX</b>		Please Circle(○) the number showing your preference (1 = I like it that way, 2 = It must be that way, 3 = I am neutral, 4 = I can live with it that way, 5 = I dislike it that way)				
1a	If CX provides with in-flight meals, how do you feel?	1	2	3	4	5
1b	If CX fails to provide in-flight meals to you, how do you feel?	1	2	3	4	5
2a	If CX provides in-flight beverages, how do you feel?	1	2	3	4	5
2b	If CX fails to provide in-flight beverages, how do you feel?	1	2	3	4	5
3a	If CX provides in-flight refreshments, how do you feel?	1	2	3	4	5
3b	If CX fails to provide in-flight refreshments, how do you feel?	1	2	3	4	5
4a	If CX provides with free checked baggage allowance, how do you feel?	1	2	3	4	5
4b	If CX fails to provide with free checked baggage allowance, how do you feel?	1	2	3	4	5
5a	If CX provides personal in-flight entertainment system, how do you feel?	1	2	3	4	5
5b	If CX fails to provide personal in-flight entertainment system, how do you feel?	1	2	3	4	5
6a	If CX provides in-flight magazine (Discovery), how do you feel?	1	2	3	4	5
6b	If CX fails to provide in-flight magazine (Discovery), how do you feel?	1	2	3	4	5
7a	If CX provides in-flight newspapers and magazines, how do you feel?	1	2	3	4	5
7b	If CX fails to provide in-flight newspapers and magazines, how do you feel?	1	2	3	4	5
8a	If CX provides personal amenities, pillow and blanket, how do you feel?	1	2	3	4	5
8b	If CX fails to provide personal amenities, pillow and blanket, how do you feel?	1	2	3	4	5
9a	If CX has on board duty-free sale, how do you feel?	1	2	3	4	5
9b	If CX has no on board duty-free sale, how do you feel?	1	2	3	4	5
10a	If CX has counter check-in, how do you feel?	1	2	3	4	5
10b	If CX has no counter check-in, how do you feel?	1	2	3	4	5
11a	If CX has agency ticketing service, how do you feel?	1	2	3	4	5
11b	If CX has no agency ticketing service, how do you feel?	1	2	3	4	5
12a	If CX has travelling package offered by CX Holiday, how do you feel?	1	2	3	4	5
12b	If CX has no travelling package offered by CX Holiday, how do you feel?	1	2	3	4	5
13a	If CX offers in-flight special assistance (Elderly, Pregnant Women, Infants, Children, Unaccompanied Minors, Disability, Medical), how do you feel?	1	2	3	4	5
13b	If CX fails to offer in-flight special assistance (Elderly, Pregnant Women, Infants, Children, Unaccompanied Minors, Disability, Medical), how do you feel?	1	2	3	4	5
14a	If CX provides special baggage handling service (early baggage check-in, urban check-in), how do you feel?	1	2	3	4	5



14b	If CX fails to provide special baggage handling service (early baggage check-in, urban check-in), how do you feel?	1	2	3	4	5
15a	If CX provides connecting flight arrangement, how do you feel?	1	2	3	4	5
15b	If CX fails to provide connecting flight arrangement, how do you feel?	1	2	3	4	5
16a	If CX has premium airport lounge, how do you feel?	1	2	3	4	5
16b	If CX has no premium airport lounge, how do you feel?	1	2	3	4	5
17a	If CX provides in-flight Wi-Fi internet connection / satellite phone / fax service, how do you feel?	1	2	3	4	5
17b	If CX fails to provide in-flight Wi-Fi internet connection / satellite phone / fax service, how do you feel?	1	2	3	4	5
18a	If CX provides seats with extra-legroom, how do you feel?	1	2	3	4	5
18b	If CX fails to provide seats with extra-legroom, how do you feel?	1	2	3	4	5
<b>PART 2 Suggested AS may be required to pay at additional cost or by rewarding credits:</b>						
19a	If CX provides premium food and beverage to the passengers who have ordered, how do you feel?	1	2	3	4	5
19b	If CX fails to provide premium food and beverage to the passengers who have ordered, how do you feel?	1	2	3	4	5
20a	If CX provides newspapers and magazines to the passengers who have ordered, how do you feel?	1	2	3	4	5
20b	If CX fails to provide newspapers and magazines to the passengers who have ordered, how do you feel?	1	2	3	4	5
21a	If CX provides on-board massage chair, how do you feel?	1	2	3	4	5
21b	If CX fails to provide on-board massage chair, how do you feel?	1	2	3	4	5
22a	If CX provides in-flight shower facilities, how do you feel?	1	2	3	4	5
22b	If CX fails to provide in-flight shower facilities, how do you feel?	1	2	3	4	5
23a	If CX provides seating selection service, how do you feel?	1	2	3	4	5
23b	If CX fails to provide seating selection service, how do you feel?	1	2	3	4	5
24a	If CX provides priority check-in and boarding service, how do you feel?	1	2	3	4	5
24b	If CX fails provide priority check-in and boarding service, how do you feel?	1	2	3	4	5
Rewards will be granted if the following arrangement(s) is/are implement						
25a	If CX performs the new arrangement on not receiving catering service on-board, how do you feel?	1	2	3	4	5
25b	If CX fails to perform the new arrangement on not receiving catering service on-board, how do you feel?	1	2	3	4	5
26a	If CX performs the new arrangement on not carrying checked baggage, how do you feel?	1	2	3	4	5
26b	If CX fails to perform the new arrangement on not carrying checked baggage, how do you feel?	1	2	3	4	5



<b>PART 4 Suggested AS may be required to pay at additional cost or by rewarding credits:</b>							
Circle (○) the number that how attractive is the concerned ancillary service to you.							
19	Pre-ordered premium foods and beverages (Wine, meals or foods)	1	2	3	4	5	6 7
20	Pre-ordered magazines and newspapers	1	2	3	4	5	6 7
21	On-board massage chair	1	2	3	4	5	6 7
22	In-flight shower facilities	1	2	3	4	5	6 7
23	Seating selection (aisle or window seat etc.)	1	2	3	4	5	6 7
24	Priority check-in and boarding	1	2	3	4	5	6 7
<b>Rewards will be granted if the following arrangement(s) is/are implemented</b>							
25	Not receiving catering services on-board	1	2	3	4	5	6 7
26	No checked baggage	1	2	3	4	5	6 7
27	Only watching in-flight advertisements with in-flight personal entertainment system	1	2	3	4	5	6 7
28	Completing customer service questionnaire(s) during the flight	1	2	3	4	5	6 7
29	Use online check-in system, self check-in kiosk and bag drop counter	1	2	3	4	5	6 7
30	Purchasing air-tickets directly through CX e-Ticket system instead of travelling agencies	1	2	3	4	5	6 7

**Part 5: Please weight to the following categories, the total weight should be 100%**

- \_\_\_\_\_ In-flight Catering and checked baggage allowance (1, 2, 3, 4)
- \_\_\_\_\_ Generic In-flight Services (5, 6, 7, 8)
- \_\_\_\_\_ Sale and Ground Services (9, 10, 11, 12)
- \_\_\_\_\_ Free Special Assistant (13, 14, 15)
- \_\_\_\_\_ Services at Extra Cost (16, 17, 18)

**Part 6: Personal Information:**

**Please tick the appropriate box below**

- 6.1 You are:  Male  Female
- 6.2 Age:  16 – 25  26 – 35  36 – 45  46 – Before retirement  Retired
- 6.3 Your purpose of air travelling (or next possible trip if not travelling today):  
 Official Journey  Private business  Holiday  Visiting friends or relatives
- 6.4 Who made/will make (if not travelling today) the airline decision for you:  
 Yourself  Company / Boss  Travel agent  Family
- 6.5 What is the average time of flight per journey? (hours)  1-3  4-8  8-12  Over 13
- 6.6 How often do you go travelling in the past 3 years?  1 – 5  6 – 12  13 – 20  21 or more
- 6.7 Which class of service do you usually use?  First  Business  Economy
- 6.8 What is your personal income per month? (HK\$)  
 Below 10k  10k – 15k  15k – 25k  25k – 40k  40k – 60k  Over 60k
- 6.9 Others (please specify)

**End of questionnaire. Thank you for your time and valuable suggestions!**

## 航空公司增值服務問卷調查

本人是香港城市大學航空管理學士學位課程三年級學生，現正進行一項有關航空公司增值服務的問卷調查，研究的主要目的是找出旅客對國泰航空公司現有的增值服務的需要、認知及期望。本問卷調查結果僅供學術參考，回答本問卷約需時五分鐘，您的答案將會是本研究調查的重要依據。本人期望能藉此改善航空旅客的旅途體驗。懇請您撥冗幫忙，謝謝。

<b>第一部份 - 國泰航空公司現正提供的增值服務</b>		<b>請以 (○) 號就您對該項增值服務的意見評分。</b>				
<b>(1 = 喜歡, 2 = 理所當然, 3 = 沒特別感覺, 4 = 無可奈何, 5 = 不喜歡)</b>						
1a	若國泰提供機上膳食，你覺得如何？	1	2	3	4	5
1b	若國泰未能提供機上膳食，你覺得如何？	1	2	3	4	5
2a	若國泰提供機上飲料，你覺得如何？	1	2	3	4	5
2b	若國泰未能提供機上飲料，你覺得如何？	1	2	3	4	5
3a	若國泰提供機上輕膳、小吃，你覺得如何？	1	2	3	4	5
3b	若國泰未能提供機上輕膳、小吃，你覺得如何？	1	2	3	4	5
4a	若國泰提供免費行李托運服務，你覺得如何？	1	2	3	4	5
4b	若國泰未能提供免費行李托運服務，你覺得如何？	1	2	3	4	5
5a	若國泰提供機上個人娛樂設備，你覺得如何？	1	2	3	4	5
5b	若國泰未能提供機上個人娛樂設備，你覺得如何？	1	2	3	4	5
6a	若國泰提供國泰雜誌"Discovery"，你覺得如何？	1	2	3	4	5
6b	若國泰未能提供國泰雜誌"Discovery"，你覺得如何？	1	2	3	4	5
7a	若國泰提供雜誌及報章，你覺得如何？	1	2	3	4	5
7b	若國泰未能提供雜誌及報章，你覺得如何？	1	2	3	4	5
8a	若國泰提供個人衛生用品、眼罩、枕頭、毛毯等，你覺得如何？	1	2	3	4	5
8b	若國泰未能提供個人衛生用品、眼罩、枕頭、毛毯等，你覺得如何？	1	2	3	4	5
9a	若國泰提供免稅品銷售，你覺得如何？	1	2	3	4	5
9b	若國泰未能免稅品銷售，你覺得如何？	1	2	3	4	5
10a	若國泰提供櫃臺登機手續及選擇機上座位，你覺得如何？	1	2	3	4	5
10b	若國泰未能提供櫃臺登機手續及選擇機上座位，你覺得如何？	1	2	3	4	5
11a	若國泰提供機票代辦及經銷服務，你覺得如何？	1	2	3	4	5
11b	若國泰未能提供機票代辦及經銷服務，你覺得如何？	1	2	3	4	5
12a	若國泰提供國泰假期提供的旅行套票服務，你覺得如何？	1	2	3	4	5
12b	若國泰未能提供國泰假期提供的旅行套票服務，你覺得如何？	1	2	3	4	5
13a	若國泰提供特別協助服務(長者、孕婦、兒童、沒有成人隨行的兒童乘客、傷健人士或有特別醫療協助的人士)，你覺得如何？	1	2	3	4	5
13b	若國泰未能提供特別協助服務(長者、孕婦、兒童、沒有成人隨行的兒童乘客、傷健人士或有特別醫療協助的人士)，你覺得如何？	1	2	3	4	5
14a	若國泰提供特別行李處理服務(行李提早辦理登記、存放及檢查)，你覺得如何？	1	2	3	4	5
14b	若國泰未能提供特別行李處理服務(行李提早辦理登記、存放及檢查)，你覺得如何？	1	2	3	4	5
15a	若國泰提供地接駁及轉機服務，你覺得如何？	1	2	3	4	5
15b	若國泰未能提供接駁及轉機服務，你覺得如何？	1	2	3	4	5
16a	若國泰提供機場貴賓候機室服務，你覺得如何？	1	2	3	4	5
16b	若國泰未能提供機場貴賓候機室服務，你覺得如何？	1	2	3	4	5
17a	若國泰提供機上無線網路連接、衛星電話及傳真通訊設備，你覺得如何？	1	2	3	4	5
17b	若國泰未能提供機上無線網路連接、衛星電話及傳真通訊設備，你覺得如何？	1	2	3	4	5
18a	若國泰提供選坐較寬敞座位的服務，你覺得如何？	1	2	3	4	5
18b	若國泰未能提供選坐較寬敞座位的服務，你覺得如何？	1	2	3	4	5

<b>第二部份 - 建議國泰航空公司提供可能需要收費或使用積分的增值服務。</b>						
19a	若國泰提供要求自選名貴食品及飲料服務(如紅酒、特別膳食或小吃等), 你覺得如何?	1	2	3	4	5
19b	若國泰未能提供要求自選名貴食品及飲料服務(如紅酒、特別膳食或小吃等), 你覺得如何?	1	2	3	4	5
20a	若國泰提供要求額外自選雜誌及報章服務, 你覺得如何?	1	2	3	4	5
20b	若國泰未能提供要求額外自選雜誌及報章服務, 你覺得如何?	1	2	3	4	5
21a	若國泰提供機上豪華按摩座椅設備, 你覺得如何?	1	2	3	4	5
21b	若國泰未能提供機上豪華按摩座椅設備, 你覺得如何?	1	2	3	4	5
22a	若國泰提供機上淋浴設施, 你覺得如何?	1	2	3	4	5
22b	若國泰未能提供機上淋浴設施, 你覺得如何?	1	2	3	4	5
23a	若國泰提供選擇近通道或靠窗座位等服務, 你覺得如何?	1	2	3	4	5
23b	若國泰未能提供選擇近通道或靠窗座位等服務, 你覺得如何?	1	2	3	4	5
24a	若國泰提供優先辦理登機手續及登機服務, 你覺得如何?	1	2	3	4	5
24b	若國泰未能提供優先辦理登機手續及登機服務, 你覺得如何?	1	2	3	4	5
<b>假如您願意放棄使用以下增值服務, 國泰將會回贈飛行哩數或積分, 請以(○)就你對項建議評分。</b>						
25a	若國泰提供選擇不需機上餐膳, 你覺得如何?	1	2	3	4	5
25b	若國泰未能提供選擇不需機上餐膳, 你覺得如何?	1	2	3	4	5
26a	若國泰提供選擇沒有托運行李, 你覺得如何?	1	2	3	4	5
26b	若國泰未能提供選擇沒有托運行李, 你覺得如何?	1	2	3	4	5
27a	若國泰提供選擇透過機上個人娛樂設備只提供觀賞機上廣告, 你覺得如何?	1	2	3	4	5
27b	若國泰未能提供選擇透過機上個人娛樂設備只提供觀賞機上廣告, 你覺得如何?	1	2	3	4	5
28a	若國泰提供選擇在航班上填寫並完成客戶服務調查問卷, 你覺得如何?	1	2	3	4	5
28b	若國泰未能提供選擇在航班上填寫並完成客戶服務調查問卷, 你覺得如何?	1	2	3	4	5
29a	若國泰提供選擇使用國泰網上預辦登機手續和在離境大堂的自助登機專櫃辦理登機及行李托運手續, 你覺得如何?	1	2	3	4	5
29b	若國泰未能提供選擇使用國泰網上預辦登機手續和在離境大堂的自助登機專櫃辦理登機及行李托運手續, 你覺得如何?	1	2	3	4	5
30a	若國泰提供選擇透過國泰電子機票系統直接購買機票, 你覺得如何?	1	2	3	4	5
30b	若國泰未能提供選擇透過國泰電子機票系統直接購買機票, 你覺得如何?	1	2	3	4	5
<b>第三部份 - 國泰航空公司現正提供的增值服務 1=最不重要/最差, 9=最重要/最佳</b>						
請以 (○) 號就您對該項增值服務的重要程度評分。						
請以 (✓) 號就您對國泰提供該項增值服務的整體印象評分。						
請以 (X) 號就您對國泰提供該項增值服務的期望評分。						
1	機上膳食	1	2	3	4	5
2	機上飲料	1	2	3	4	5
3	機上輕膳、小吃	1	2	3	4	5
4	免費行李托運服務	1	2	3	4	5
5	機上個人娛樂設備	1	2	3	4	5
6	國泰雜誌"Discovery"	1	2	3	4	5
7	雜誌及報章	1	2	3	4	5
8	個人衛生用品、枕頭、毛毯等	1	2	3	4	5
9	免稅品銷售	1	2	3	4	5
10	櫃臺登機手續及選擇機上座位	1	2	3	4	5
11	機票代辦及經銷服務	1	2	3	4	5
12	國泰假期提供的旅行套票服務	1	2	3	4	5
13	提供特別協助服務 (長者、孕婦、兒童、沒有成人隨行的兒童乘客、傷健人士或有特別醫療協助的人士)	1	2	3	4	5
14	特別行李處理服務(行李提早辦理登記、存放及檢查)	1	2	3	4	5
15	接駁及轉機服務	1	2	3	4	5

16	機場貴賓候機室服務	1	2	3	4	5	6	7
17	機上無線網路連接、衛星電話及傳真通訊設備	1	2	3	4	5	6	7
18	選坐較寬敞的座位	1	2	3	4	5	6	7
<b>第四部份 - 建議國泰航空公司提供可能需要收費或使用積分的增值服務。</b>								
<b>請以 (○)號就該項新建議的增值服務對您的吸引程度評分。</b>								
19	要求自選名貴食品及飲料 (如紅酒、特別膳食或小吃等)	1	2	3	4	5	6	7
20	要求額外自選雜誌及報章	1	2	3	4	5	6	7
21	提供機上豪華按摩座椅設備	1	2	3	4	5	6	7
22	機上淋浴設施	1	2	3	4	5	6	7
23	選擇近通道或靠窗座位等	1	2	3	4	5	6	7
24	優先辦理登機手續及登機	1	2	3	4	5	6	7
<b>假如您願意放棄使用以下增值服務，國泰將會回贈飛行哩數或積分，請以(○)就你對項建議的吸引程度評分。</b>								
25	選擇不需機上餐膳	1	2	3	4	5	6	7
26	沒有托運行李	1	2	3	4	5	6	7
27	選擇透過機上個人娛樂設備只提供觀賞機上廣告	1	2	3	4	5	6	7
28	在航班上填寫並完成客戶服務調查問卷	1	2	3	4	5	6	7
29	使用國泰網上預辦登機手續和在離境大堂的自助登機專櫃辦理登機及行李托運手續	1	2	3	4	5	6	7
30	透過國泰電子機票系統直接購買機票	1	2	3	4	5	6	7

**第五部份：請對以下五種分類評分總分應為 100%**

- \_\_\_\_\_ 機艙膳食 及 托運行李服務 (1, 2, 3, 4)
- \_\_\_\_\_ 一般機艙服務 (5, 6, 7, 8)
- \_\_\_\_\_ 銷售地勤及支援服務 (9, 10, 11, 12)
- \_\_\_\_\_ 免費特別服務 (13, 14, 15)
- \_\_\_\_\_ 需要使用額外積分或費用的服務 (16, 17, 18)

**第六部份： 個人資料： 請以✓選擇適當的方格**

- 3.1 您的性別： 男 女
- 3.2 年齡： 16-25 歲 26-35 歲 36-45 歲 46 歲-即將退休 已退休
- 3.3 您此行的目的？： 商務 探望親友 觀光旅游、度假 到外地升學
- 3.4 誰替您選擇此行使用的航空公司？您自己上司/公司 旅行社 家人
- 3.5 您每程的平均飛行時間是多少？ 1-3 小時 4-8 小時 8-12 小時超過 13 小時
- 3.6 您於過去三年內的外遊次數是多少？1-5 次 6-12 次 13-20 次 21 次以上
- 3.7 您乘搭的機艙級別？ 頭等艙 商務艙 經濟艙
- 3.8 您個人每月收入為多少？ (港幣)
- 10k 以下 10k-15k 15k-25k 25k-40k 40k-60k 60k 以上
- 3.9 其它(請註明)

問卷完。多謝閣下的寶貴時間及意見！

Appendix VI

Kano categories in frequency of Leisure Traveller

	Q	A	O	I	R	M
1. in-flight meals	0	14	7	20	1	50
2. in-flight beverages	0	19	3	11	0	59
3. in-flight refreshments	0	31	2	17	0	42
4. free checked baggage	0	7	14	5	0	66
5. personal entertainment system	0	19	28	21	0	24
6. in-flight magazine "Discovery"	0	21	3	53	0	15
7. in-flight newspapers	0	35	13	32	0	12
8. in-flight personal amenities	0	41	2	40	0	9
9. on-board duty-free sale	0	29	22	17	7	17
10. counter check-in	0	12	8	12	0	60
11. agency ticketing system	0	8	11	10	0	63
12. CX holidays	0	20	11	40	0	21
13. in-flight special assistance	0	14	29	25	0	24
14. special baggage handling	0	23	14	35	0	20
15. connecting flight	0	29	13	27	0	23
16. airport lounge	0	20	7	44	0	21
17. in-flight Wi-Fi	0	16	33	28	0	15
18. extra legroom	0	45	13	17	6	11
19. order premium food	0	33	27	15	3	14
20. order newspapers	0	30	0	39	2	21
21. massage chairs on-board	0	21	19	41	5	6
22. in-flight shower	0	35	25	23	1	8
23. seating selection	0	22	37	9	13	11
24. priority check-in	0	8	6	41	31	6
25. no in-flight catering rewards	0	46	10	10	0	26
26. no checked baggage rewards	0	21	0	45	0	26
27. watch in-flight advertisements rewards	0	29	24	16	7	16
28. completing questionnaires rewards	0	32	16	24	9	11
29. online check-in rewards	0	68	0	16	0	8
30. buy ticket from CX rewards	0	21	0	45	0	26

**Appendix VII**

**Kano categories in frequency of Business Traveller**

	Q	A	O	I	R	M
1. in-flight meals	0	6	8	4	0	10
2. in-flight beverages	0	1	4	3	0	20
3. in-flight refreshments	0	7	1	2	0	18
4. free checked baggage	0	4	8	1	0	15
5. personal entertainment system	0	6	13	2	0	7
6. in-flight magazine "Discovery"	0	3	1	15	0	9
7. in-flight newspapers	0	9	5	6	0	8
8. in-flight personal amenities	0	10	2	9	0	7
9. on-board duty-free sale	0	11	8	5	1	3
10. counter check-in	0	6	3	5	0	14
11. agency ticketing system	0	5	2	8	0	13
12. CX holidays	0	10	1	17	0	0
13. in-flight special assistance	0	7	4	14	0	3
14. special baggage handling	0	13	2	10	0	3
15. connecting flight	0	11	7	2	0	8
16. airport lounge	0	15	3	9	0	1
17. in-flight Wi-Fi	0	7	5	3	0	13
18. extra legroom	0	10	1	9	0	8
19. order premium food	0	15	3	9	1	0
20. order newspapers	0	3	11	6	0	8
21. massage chairs on-board	0	11	5	9	1	2
22. in-flight shower	0	11	6	8	0	3
23. seating selection	0	8	4	9	0	7
24. priority check-in	0	9	8	5	0	6
25. no in-flight catering rewards	0	12	3	9	0	4
26. no checked baggage rewards	0	14	4	5	3	2
27. watch in-flight advertisements rewards	0	9	3	11	3	2
28. completing questionnaires rewards	0	11	1	13	1	2
29. online check-in rewards	0	20	0	8	0	0
30. buy ticket from CX rewards	0	9	1	17	0	1

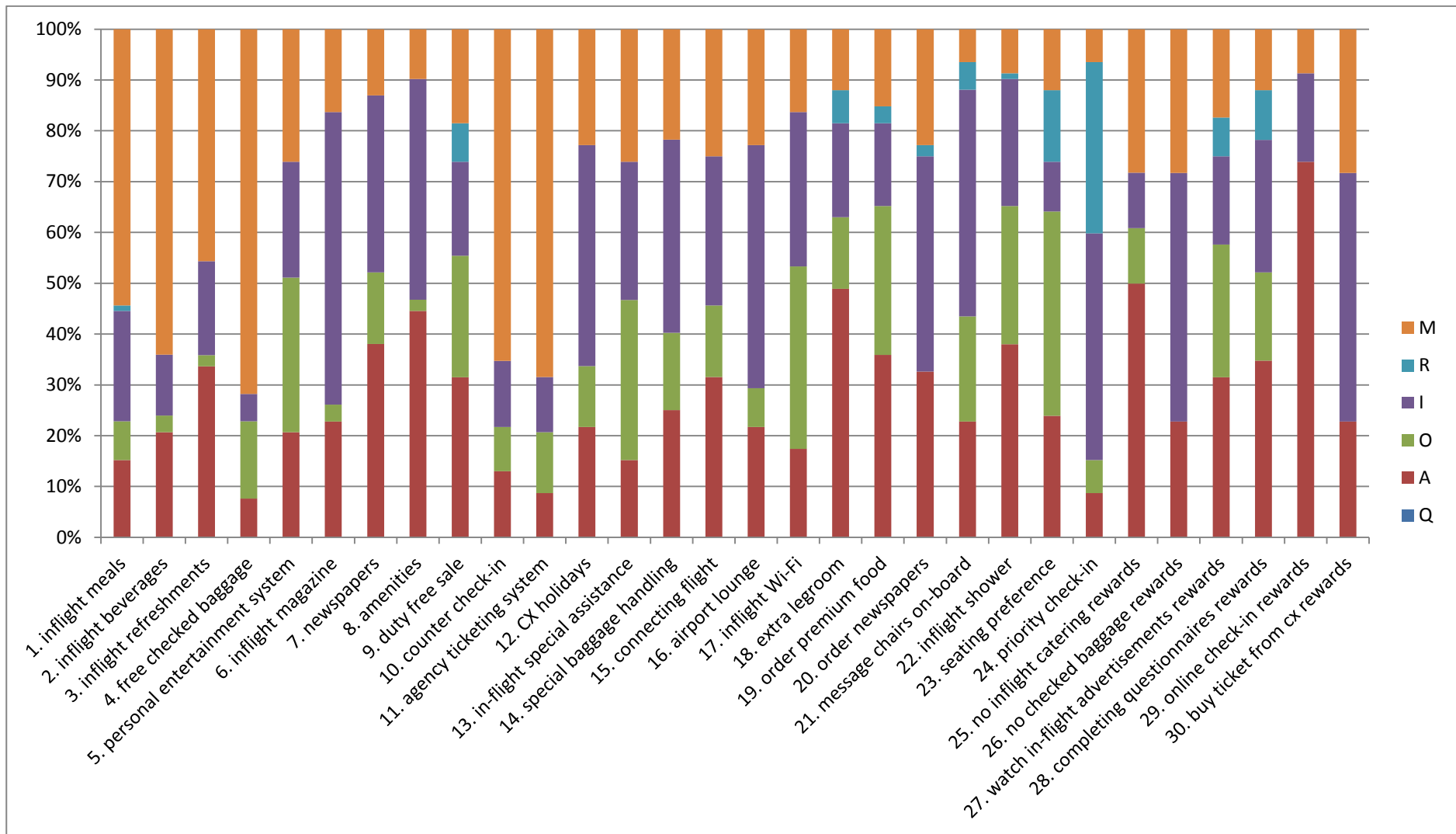
\*The figures in red indicate the most frequent outcomes for that ancillary service.



**Appendix VIII**

**Kano categories in percentage of Leisure Traveller**

In percentage (%)	Q	A	O	I	R	M
1. in-flight meals	0	15.2	7.6	21.7	1.1	54.3
2. in-flight beverages	0	20.7	3.3	12	0	64.1
3. in-flight refreshments	0	33.7	2.2	18.5	0	45.7
4. free checked baggage	0	7.6	15.2	5.4	0	71.7
5. personal entertainment system	0	20.7	30.4	22.8	0	26.1
6. in-flight magazine "Discovery"	0	22.8	3.3	57.6	0	16.3
7. in-flight newspapers	0	38	14.1	34.8	0	13
8. in-flight personal amenities	0	44.6	2.2	43.5	0	9.8
9. on-board duty-free sale	0	31.5	23.9	18.5	7.6	18.5
10. counter check-in	0	13	8.7	13	0	65.2
11. agency ticketing system	0	8.7	12	10.9	0	68.5
12. CX holidays	0	21.7	12	43.5	0	22.8
13. in-flight special assistance	0	15.2	31.5	27.2	0	26.1
14. special baggage handling	0	25	15.2	38	0	21.7
15. connecting flight	0	31.5	14.1	29.3	0	25
16. airport lounge	0	21.7	7.6	47.8	0	22.8
17. in-flight Wi-Fi	0	17.4	35.9	30.4	0	16.3
18. extra legroom	0	48.9	14.1	18.5	6.5	12
19. order premium food	0	35.9	29.3	16.3	3.3	15.2
20. order newspapers	0	32.6	0	42.4	2.2	22.8
21. massage chairs on-board	0	22.8	20.7	44.6	5.4	6.5
22. in-flight shower	0	38	27.2	25	1.1	8.7
23. seating selection	0	23.9	40.2	9.8	14.1	12
24. priority check-in	0	8.7	6.5	44.6	33.7	6.5
25. no in-flight catering rewards	0	50	10.9	10.9	0	28.3
26. no checked baggage rewards	0	22.8	0	48.9	0	28.3
27. watch in-flight advertisements rewards	0	31.5	26.1	17.4	7.6	17.4
28. completing questionnaires rewards	0	34.8	17.4	26.1	9.8	12
29. online check-in rewards	0	73.9	0	17.4	0	8.7
30. buy ticket from CX rewards	0	22.8	0	48.9	0	28.3



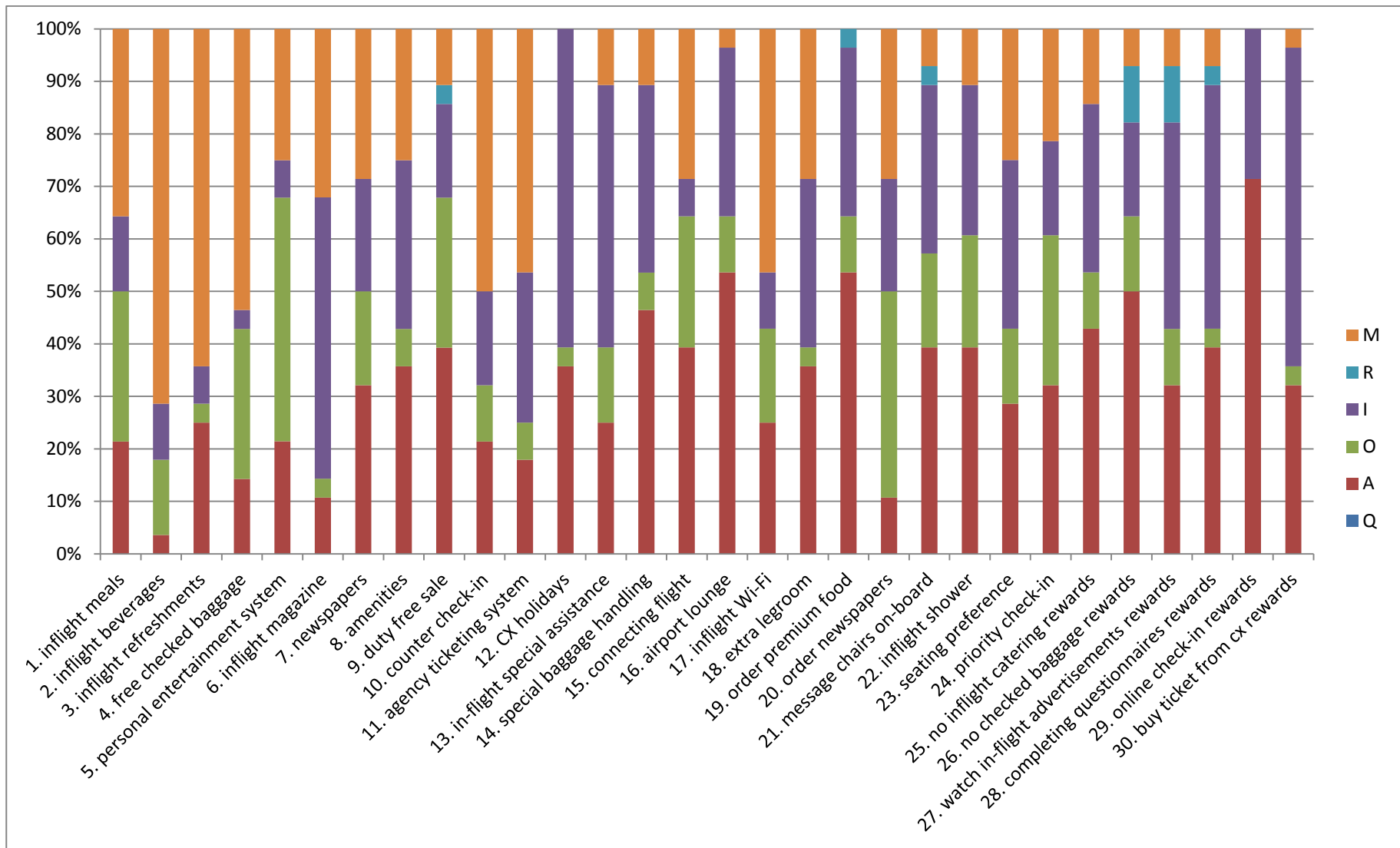
**Figure 2: Percentage Chart of the Leisure Traveller**

Appendix IX

Kano categories in percentage of Business Traveller

In percentage (%)	Q	A	O	I	R	M
1. in-flight meals	0	21.4	28.6	14.3	0	35.7
2. in-flight beverages	0	3.6	14.3	10.7	0	71.4
3. in-flight refreshments	0	25	3.6	7.1	0	64.3
4. free checked baggage	0	14.3	28.6	3.6	0	53.6
5. personal entertainment system	0	21.4	46.4	7.1	0	25
6. in-flight magazine "Discovery"	0	10.7	3.6	53.6	0	32.1
7. in-flight newspapers	0	32.1	17.9	21.4	0	28.6
8. in-flight personal amenities	0	35.7	7.1	32.1	0	25
9. on-board duty-free sale	0	39.3	28.6	17.9	3.6	10.7
10. counter check-in	0	21.4	10.7	17.9	0	50
11. agency ticketing system	0	17.9	7.1	28.6	0	46.4
12. CX holidays	0	35.7	3.6	60.7	0	0
13. in-flight special assistance	0	25	14.3	50	0	10.7
14. special baggage handling	0	46.4	7.1	35.7	0	10.7
15. connecting flight	0	39.3	25	7.1	0	28.6
16. airport lounge	0	53.6	10.7	32.1	0	3.6
17. in-flight Wi-Fi	0	25	17.9	10.7	0	46.4
18. extra legroom	0	35.7	3.6	32.1	0	28.6
19. order premium food	0	53.6	10.7	32.1	3.6	0
20. order newspapers	0	10.7	39.3	21.4	0	28.6
21. massage chairs on-board	0	39.3	17.9	32.1	3.6	7.1
22. in-flight shower	0	39.3	21.4	28.6	0	10.7
23. seating selection	0	28.6	14.3	32.1	0	25
24. priority check-in	0	32.1	28.6	17.9	0	21.4
25. no in-flight catering rewards	0	42.9	10.7	32.1	0	14.3
26. no checked baggage rewards	0	50	14.3	17.9	10.7	7.1
27. watch in-flight advertisements rewards	0	32.1	10.7	39.3	10.7	7.1
28. completing questionnaires rewards	0	39.3	3.6	46.4	3.6	7.1
29. online check-in rewards	0	71.4	0	28.6	0	0
30. buy ticket from CX rewards	0	32.1	3.6	60.7	0	3.6

\*The figures in red indicate the most frequent outcomes for that ancillary service.



**Figure 3: Percentage Chart of the Business Traveller**

**Appendix X**

**Dominant Kano categories of Leisure Traveller and Business Traveller**

	Leisure Traveller	Business Traveller	Same ?
1. in-flight meals	M	M	yes
2. in-flight beverages	M	M	yes
3. in-flight refreshments	M	M	yes
4. free checked baggage	M	M	yes
5. personal entertainment system	M	O	no
6. in-flight magazine "Discovery"	I	I	yes
7. in-flight newspapers	A	A	yes
8. in-flight personal amenities	A	A	yes
9. on-board duty-free sale	A	A	yes
10. counter check-in	M	M	yes
11. agency ticketing system	M	M	yes
12. CX holidays	I	I	yes
13. in-flight special assistance	O	I	no
14. special baggage handling	I	A	no
15. connecting flight	A	A	yes
16. airport lounge	I	A	no
17. in-flight Wi-Fi	O	M	no
18. extra legroom	A	A	yes
19. order premium food	A	A	yes
20. order newspapers	I	M	no
21. massage chairs on-board	I	A	no
22. in-flight shower	A	A	yes
23. seating selection	O	I	no
24. priority check-in	I	A	no
25. no in-flight catering rewards	A	A	yes
26. no checked baggage rewards	A	A	yes
27. watch in-flight advertisements rewards	A	I	no
28. completing questionnaires rewards	A	I	no
29. online check-in rewards	A	A	yes
30. buy ticket from CX rewards	I	I	yes

**Appendix XI**

**SERVQUAL Weight Score of Leisure Traveller and Business Traveller**

	<b>Leisure Traveller</b>	<b>Business Traveller</b>
	<b>SERVQUAL weight</b>	<b>SEVQUAL weight</b>
<b>1. in-flight meals</b>	<b>0.26</b>	<b>0.25</b>
<b>2. in-flight beverages</b>	<b>0.26</b>	<b>0.25</b>
<b>3. in-flight refreshments</b>	<b>0.26</b>	<b>0.25</b>
<b>4. free checked baggage</b>	<b>0.26</b>	<b>0.25</b>
<b>5. personal entertainment system</b>	<b>0.23</b>	<b>0.23</b>
<b>6. in-flight magazine “Discovery”</b>	<b>0.23</b>	<b>0.23</b>
<b>7. in-flight newspapers</b>	<b>0.23</b>	<b>0.23</b>
<b>8. in-flight personal amenities</b>	<b>0.23</b>	<b>0.23</b>
<b>9. on-board duty-free sale</b>	<b>0.24</b>	<b>0.21</b>
<b>10. counter check-in</b>	<b>0.24</b>	<b>0.21</b>
<b>11. agency ticketing system</b>	<b>0.24</b>	<b>0.21</b>
<b>12. CX holidays</b>	<b>0.24</b>	<b>0.21</b>
<b>13. in-flight special assistance</b>	<b>0.13</b>	<b>0.15</b>
<b>14. special baggage handling</b>	<b>0.13</b>	<b>0.15</b>
<b>15. connecting flight</b>	<b>0.13</b>	<b>0.15</b>
<b>16. airport lounge</b>	<b>0.14</b>	<b>0.16</b>
<b>17. in-flight Wi-Fi</b>	<b>0.14</b>	<b>0.16</b>
<b>18. extra legroom</b>	<b>0.14</b>	<b>0.16</b>

## Appendix XII

## SERVQUAL value of Leisure Traveller

	Perception value	Expectation value	Importance level	Gap 5 score
1. in-flight meals	4.71	5.81	6.1	-0.286
2. in-flight beverages	5.11	5.31	5.87	-0.052
3. in-flight refreshments	4.19	5.35	5.99	-0.3016
4. free checked baggage	4.27	5.44	6.32	-0.3042
5. personal entertainment system	3.95	5.29	6.01	-0.3082
6. in-flight magazine "Discovery"	3.21	3.75	4.54	-0.1242
7. in-flight newspapers	3.78	5.25	5.38	-0.3381
8. in-flight personal amenities	3.68	3.88	4.11	-0.046
9. on-board duty-free sale	3.91	5.21	5.29	-0.312
10. counter check-in	4.12	5.02	5.78	-0.216
11. agency ticketing system	3.85	5.12	5.21	-0.3048
12. CX holidays	4.13	4.76	4.91	-0.1512
13. in-flight special assistance	4.21	4.98	5.67	-0.1001
14. special baggage handling	3.32	3.62	4.39	-0.039
15. connecting flight	3.85	6.16	6.22	-0.3003
16. airport lounge	3.11	3.45	3.64	-0.0476
17. in-flight Wi-Fi	4.32	5.17	5.01	-0.119
18. extra legroom	3.66	4.05	4.13	-0.0546
19. order premium food	-	-	5.32	-
20. order newspapers	-	-	4.58	-
21. massage chairs on-board	-	-	3.47	-
22. in-flight shower	-	-	4.35	-
23. seating selection	-	-	3.26	-
24. priority check-in	-	-	2.92	-
25. no in-flight catering rewards	-	-	5.47	-
26. no checked baggage rewards	-	-	5.81	-
27. watch in-flight advertisements rewards	-	-	4.61	-
28. completing questionnaires rewards	-	-	4.89	-
29. online check-in rewards	-	-	5.63	-
30. buy ticket from CX rewards	-	-	4.23	-

Appendix XIII

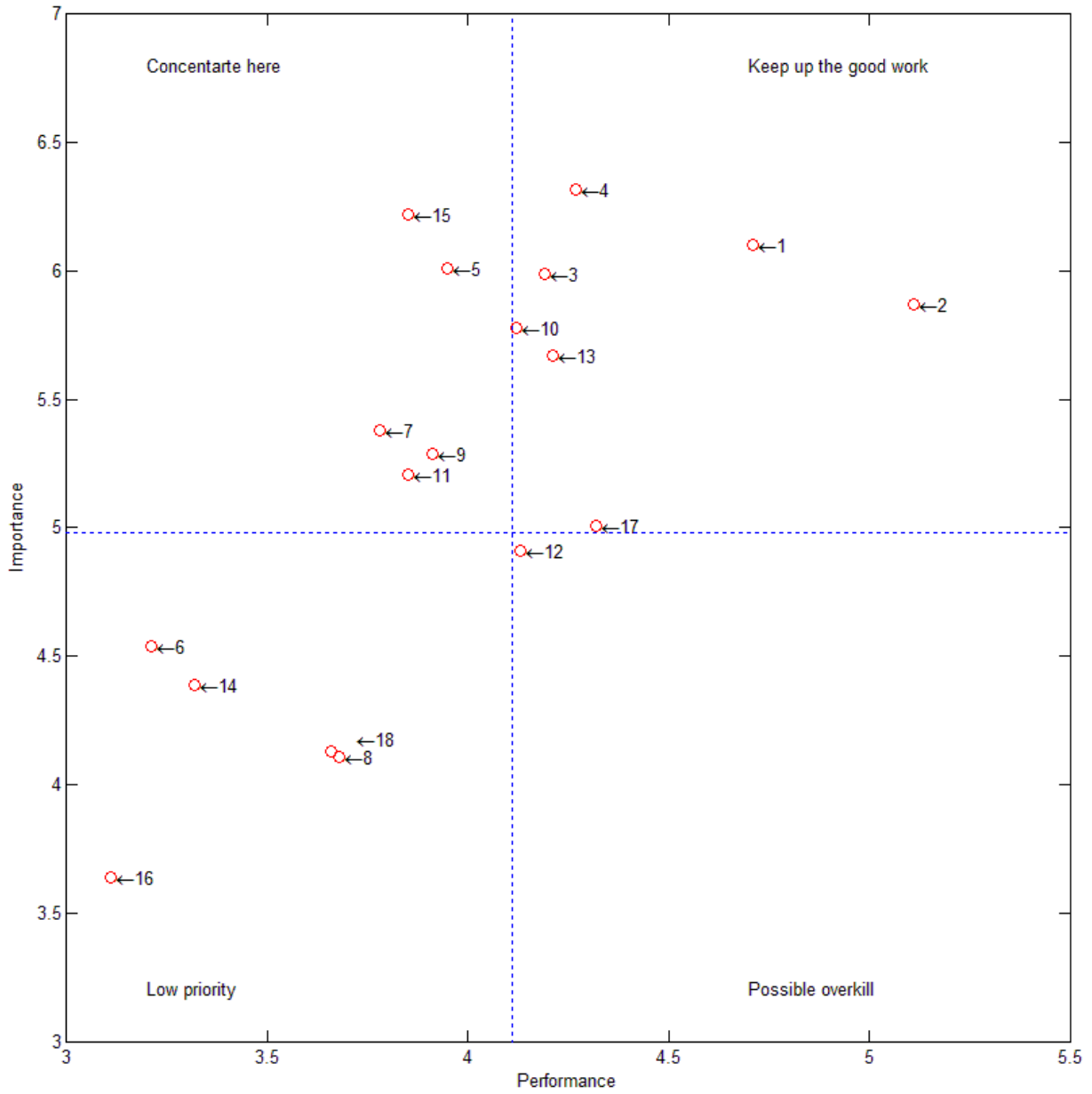
SERVQUAL value of Business Traveller

	Perception value	Expectation value	Importance level	Gap 5 score
1. in-flight meals	4.02	5.88	5.65	-0.465
2. in-flight beverages	4.97	5.47	6.02	-0.125
3. in-flight refreshments	4.02	5.12	5.65	-0.275
4. free checked baggage	4.02	5.88	6.02	-0.465
5. personal entertainment system	4.02	5.47	5.65	-0.3335
6. in-flight magazine“ Discovery”	3.71	3.98	4.54	-0.0621
7. in-flight newspapers	3.33	5.12	5.65	-0.4117
8. in-flight personal amenities	3.33	4.35	4.11	-0.2346
9. on-board duty-free sale	3.71	5.47	5.65	-0.3696
10. counter check-in	4.02	5.12	5.65	-0.231
11. agency ticketing system	3.01	5.12	6.02	-0.4431
12. CX holidays	3.71	4.73	5.27	-0.2142
13. in-flight special assistance	3.71	4.35	4.54	-0.096
14. special baggage handling	3.01	5.12	5.27	-0.3165
15. connecting flight	3.33	6.01	6.41	-0.402
16. airport lounge	3.33	4.35	5.27	-0.1632
17. in-flight Wi-Fi	4.02	5.12	5.27	-0.176
18. extra legroom	3.71	4.35	4.54	-0.1024
19. order premium food	-	-	5.14	-
20. order newspapers	-	-	4.27	-
21. massage chairs on-board	-	-	3.98	-
22. in-flight shower	-	-	4.11	-
23. seating selection	-	-	5.74	-
24. priority check-in	-	-	2.99	-
25. no in-flight catering rewards	-	-	5.87	-
26. no checked baggage rewards	-	-	6.38	-
27. watch in-flight advertisements rewards	-	-	4.78	-
28. completing questionnaires rewards	-	-	4.15	-
29. online check-in rewards	-	-	5.61	-
30. buy ticket from CX rewards	-	-	4.11	-



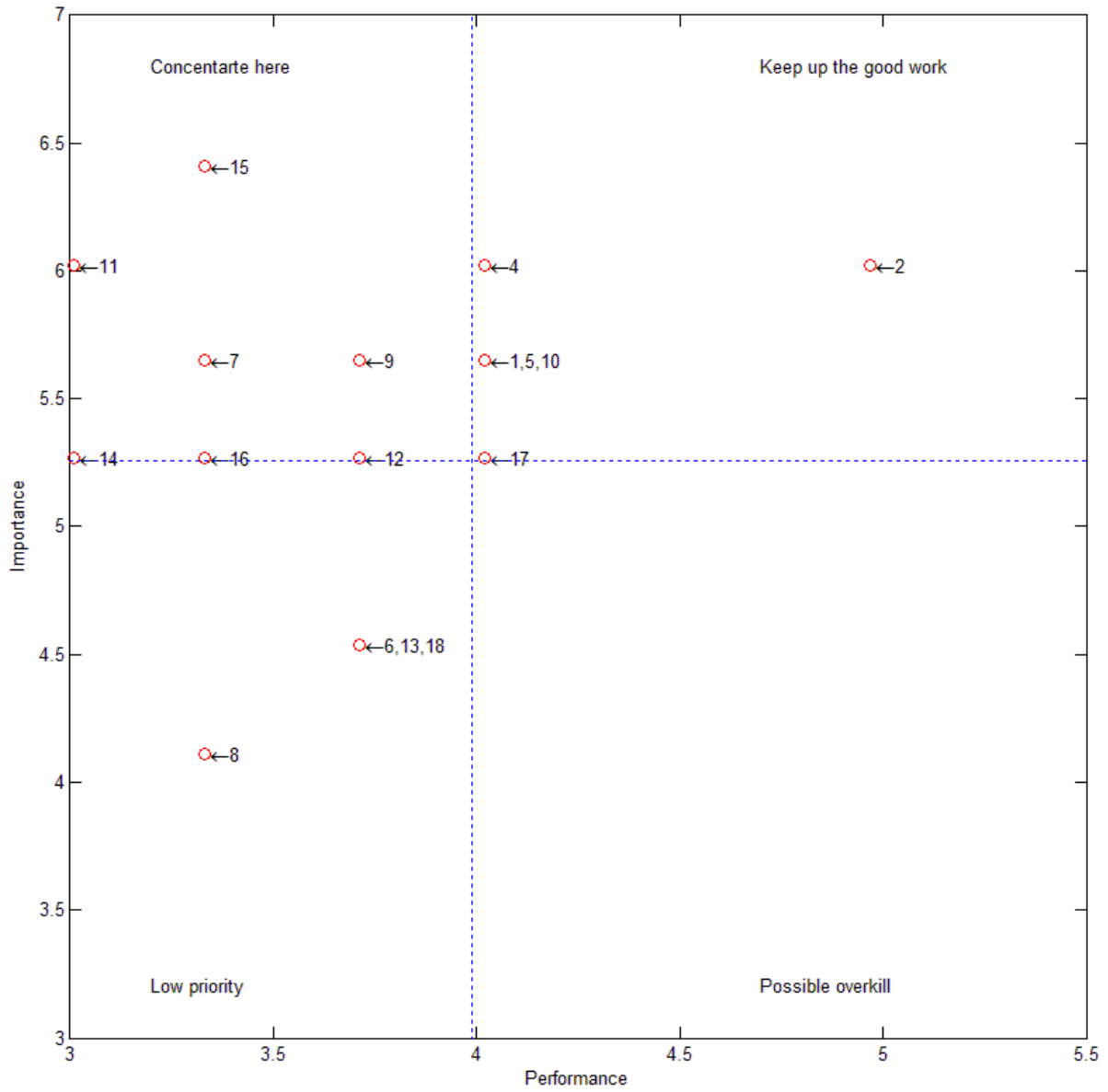
# Appendix XIV

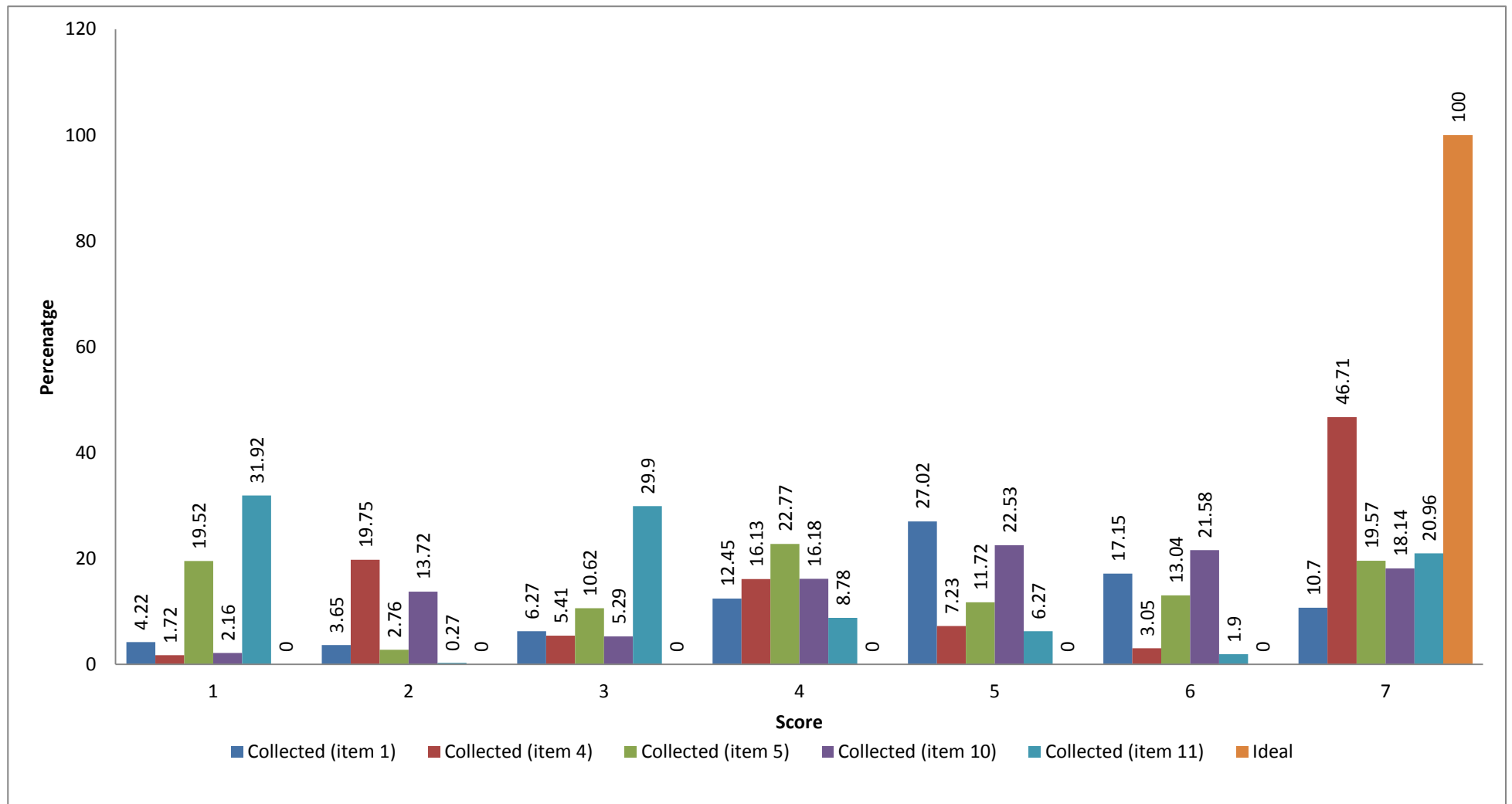
# IPA Value of Leisure Traveller



Appendix XV

IPA Value of Business Traveller





**Figure 14: Percentage distribution for the collected result and the ideal result**