

How Can Chinese Low-cost Carriers Become Successful and Profitable

By

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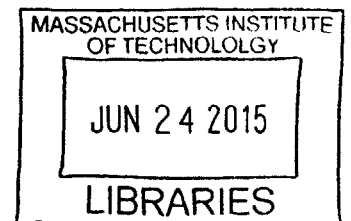
SUBMITTED TO THE MIT SLOAN SCHOOL OF MANAGEMENT IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE DEGREE OF

MASTER OF SCIENCE IN MANAGEMENT STUDIES
AT THE
MASSACHUSETTS INSTITUTE OF TECHNOLOGY

JUNE 2015

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By

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Submitted to MIT Sloan School of Management
on May 8, 2015 in Partial Fulfillment of the
requirements for the Degree of Master of Science in
Management Studies

ABSTRACT

This thesis is a discussion of improvements Chinese Low-cost Carriers (LCCs) could make in order to become profitable and successful as their counterparts in Europe and the United States. China is Asia's latest LCC market and has accelerated its pace in developing LCCs since Chinese authorities published the "*Guidance on Promoting the Development of Low-Cost Airlines*" at the end of 2013. There are currently seven LCCs in China, including Spring Airlines, an established LCC since 2004 along with another six newly established LCCs in response to the published *Guidance*.

The newly established six have followed many practices adopted by Spring Airlines, which is seen as a role model for the Chinese LCC market. Spring Airlines applies sound management practices to control its costs, producing good profitability. As the *Guidance* is implemented by Chinese authorities in next few years, many costs that were previously uncontrolled, such as aircraft ownership, crew and airport fees, could be further cut. While expecting positive news from civil authorities, Spring Airlines and other Chinese LCCs could begin work on improvements. From the perspective of cost control, Spring Airlines could reduce its labor costs by decreasing employee-to-aircraft ratio. In terms of increasing revenue, Spring Airlines could increase charges on excess baggage and seat selection. It could also expand into various other ancillary services, such as in-flight wifi, to increase revenues.

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Acknowledgements

I would like to express my deepest gratitude to my advisor, Peter Belobaba. I came to know his name when I began my career in airline industry many years ago. His research on airline revenue management is well recognized by the entire industry and has been well applied by airlines worldwide. I never thought that I would have the honor to take his class at MIT and have him be my thesis advisor. I am deeply grateful for all the valuable advice he has shared with me. His scientific attitude toward research has benefited me, with both academic studies and personal growth.

I also would like to give my thanks to my former colleague, Marcelo Alves Araujo, who gave me valuable suggestions on topic selection and helped me with data collection and research. I also owe a great thanks to George P. Sempeles, who helped proofread my thesis and provides continuous encouragement as I pursue my career goals. George is an old friend who has devoted decades of his life with a career in FAA. To my classmates in the MBA program at Peking University, it is amazing to have them as my peers. Their encouragement is the main reason that brought me here to MIT. It has been my pleasure to exchange thoughts with them and become inspired by those interactions.

Lastly, I would like to give my special thanks to my family. You have given me great understanding and support with every endeavor I have pursued in my life. Thanks for all the sacrifice you have made. Thanks for being the most important ones in my life.

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1. Introduction

1.1. Problem Statement and Objectives

The business model of a Low-cost Carrier (LCC) was first introduced in the US market by Southwest Airlines in the 1970s. Low-cost Carriers (LCCs), also known as no-frill carriers, are airlines that generally have a lower operating cost structure than legacy, full service carriers (FSCs). Unlike FSCs, LCCs provide only basic services to their passengers, which results in lower cost per seat as illustrated in Figure 1. To enhance profitability, LCCs charge passengers additional fees for ancillary services such as in-flight meals and checked baggage, which are included in FSC fares.

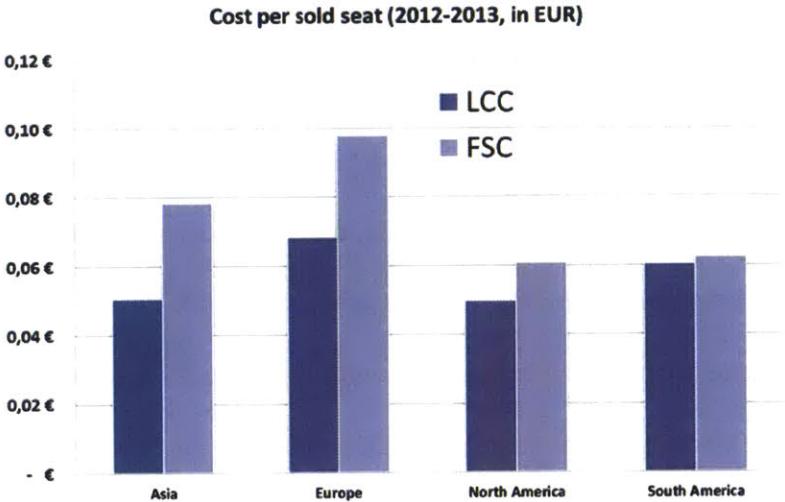


Figure 1 - LCC vs. FSC Comparison - Cost per sold seats 2012-2013
Source: International Low-cost Airline Market Research, AirlinePROFILER

A ranking list of LCCs in terms of ancillary revenue as percentage in total revenue is illustrated in Figure 2. Revenue from ancillary service has become the main source of profit for LCCs.

**Top 10 Airlines – Ancillary Revenue as a % of Total Revenue
2013**



Figure 2 - Top 10 Airlines - Ancillary Revenue as a % of Total Revenue 2013

Source: IdeaWorksCompany Press Release — 16 July 2014

With the steadily rising number of passengers and traffic capacities over the last 40 years, sales revenues of carriers using the LCC business model have substantially increased and the concept has been copied by many established legacy carriers and newly founded airlines. During the downturn in US air transportation market after 2001, only LCCs such as Southwest and JetBlue managed to make a profit while major full service carriers suffered losses. In 2013¹, 1.03 billion USD (22% of net US industry profit 4.7 billion USD) went to the 6 LCCs with 20% of the share of ASM's (Available Seat Miles)[1]. In the same year, LCCs accounted for 22% of worldwide market share in ASM[2].

Even though Spring Airlines is the only Chinese carrier using the LCC business model in the domestic market, it has proved quite successful in China. The six other Chinese carriers using the LCC business model either have recently transitioned their legacy business model or are

¹ Data in this thesis is mainly based on 2013. It is the latest available data because annual reports of 2014 have not been published by airlines.

new startups with their first scheduled flights in 2015. Currently, their operating and financial data is not mature enough to reflect the expected performance of LCCs.

In 2013, total Chinese Airlines operating revenues were 65 billion USD², earnings before tax (EBT) 2.61 billion USD with an EBT margin of 4%[3]. Although the big three state-owned FSC air carriers (Air China, China Eastern and China Southern) had 72% of the total fleet number in China, their EBT only accounted for 63% of the total profits. EBT of the big three airlines suffered approximately a 30% decrease in 2013 compared with 2012 due to national anti-corruption policies implemented in December 2012 which substantially cut business travel by government officials. The national policy clearly articulated that government officials were forbidden to take first class seats for official business trips. This policy severely impacted the big three airlines revenues as they have long relied upon first and business class sales for government officials' business travel. To regain lost revenues as a result of this policy, legacy airlines had to offer discounts on first and business class fares. Some legacy airlines even retrofitted their aircraft by removing their first seats and turning them in to either business class economy class seats.

Despite this policy, Spring Airlines, with only 1.6% of the total Chinese fleet (39 aircraft), gained 6.1% of the total national EBT and experienced an 18% increase in 2013 revenues as compared with 2012. Fleet market shares of the four largest airlines and Spring Airlines are illustrated in Figure 3. EBT composition by airline in 2013 is illustrated in Figure 4. Decreased EBT of the big three airlines and rising profitability of Spring Airlines are illustrated in Figure 5.

² Exchange ratio: 1 USD = 6.23 CNY, same below

Composition - Fleet 2013

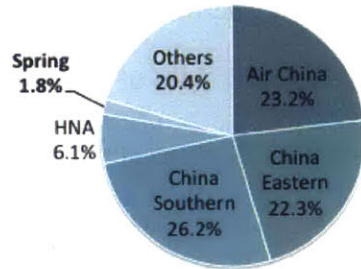


Figure 3 - Chinese Airlines Fleet Composition 2013

Source: Annual Reports of Chinese Airlines

Composition - Earnings before tax 2013

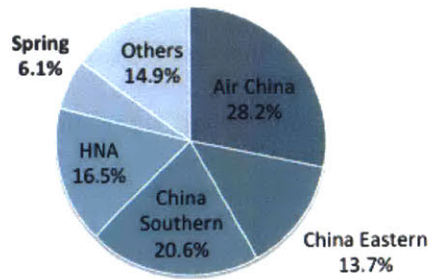


Figure 4 - Chinese Airlines Earnings before Tax Composition 2013

Earnings Before Tax - Million USD

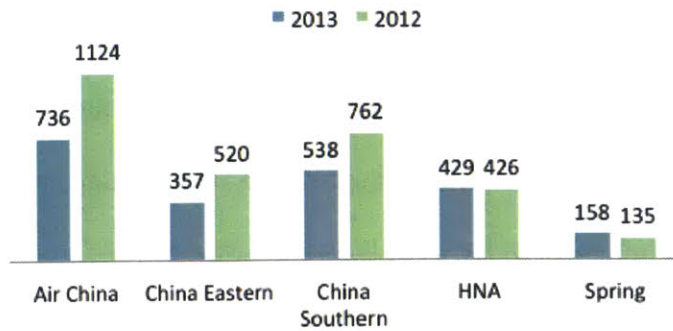


Figure 5 - Earnings before Tax Comparison between Big Four Airlines and Spring Airlines 2013 and 2012

An analysis of the data depicted in Figures 3, 4 and 5 indicates Spring Airlines had the highest ratio of EBT versus fleet number followed by Hainan Airlines Group (HNA).

Chinese LCCs have also greatly contributed to the prosperity of local economies. In 2009, Spring Airlines established a base at Shijiazhuang airport in the north of China. According to statistics published on the Civil Aviation Administration of China (CAAC) website, passenger throughput at Shijiazhuang increased from 1.32 million enplanements in 2009 to 4.85 million enplanements in 2012, a growth rate increase of 367%. This tremendous business growth rate has been one of the key enablers of the Shijiazhuang regions economic development.

It is evident that LCCs in China can be as successful as they are in other regions of the world. Nonetheless, according to the *CAAC Newspaper*, the market share of LCCs in China only makes up 5% of total operations while the world average for LCC operations is 22%. China is the world's largest developing country with the world's second largest air transportation system. It has a huge population where most are low-income earners that do not take frequent flights. The frequency of taking a flight in China is 0.25 per year per capita where in United States this number is greater than 2[4]. As a result, it is widely believed that a LCC has great growth potential in the Chinese market despite the many regulatory restrictions and cumbersome operational environment that will be discussed in the following chapter.

What makes the Chinese LCC market more attractive, the CAAC announced that they are planning a new range of measures designed to support the development of LCCs in China. This public announcement directly led to the increase of numbers of Chinese LCCs from one to seven which include Spring Airlines, China West Air (owned by HNA), China United Airlines (owned by China Eastern), Beijing Capital Airlines (owned by HNA), China Express, Chengdu

Airlines, and Jiuyuan Airlines (owned by Juneyao Airlines). However, extensive concerns about these emerging LCCs have been discussed for quite a long time in China because the founders and managers possess no experience and expertise in LCC operations. Compounding this situation, it is very difficult for other LCCs to practice lessons learned from the success of Spring Airlines due to its specialty development path and company culture.

The main objective of this study is to evaluate the operational and financial performance of Chinese LCCs and conclude what would be a Chinese solution for a successful and profitable LCC.

1.2. Content and Methodology

This thesis will first discuss the current state, development trends and restrictions of the Chinese LCC market. Second, it will examine the business models and strategies of Chinese LCCs as well as bench marking the financial performance of some those who have public statistics. Third, it will look at typical practices of world leading LCCs and discussion the possibility and feasibility of applying them to the Chinese market. Finally, it will conclude a strategy and business model by which Chinese LCCs could follow.

The discussion will primarily use a comparative analysis method, which will be made between Chinese NLCs and LCCs, and between Chinese LCCs and LCCs in the United States and Europe.

2. Chinese LCC Market

2.1. Current State of the Chinese LCC Market

On November 5th 2013 in Beijing, CAAC Vice-administrator Xia Xinghua proclaimed “We urgently need to develop LCCs” at the ICAO/CAAC Symposium on Low Cost Carriers. It became clear that fundamental changes are required to enable the development of low-cost carriers in the Chinese aviation market. This proclamation was the catalyst for the establishment of new LCCs and the transition of current FSCs to LCCs.

Table 1 illustrates a snapshot of the seven LCCs in China as of Feb 2015. As shown in the table, there are only two carriers (Spring Airlines and West Air) that have been operating in a LCC model. 9 Air conducted its first scheduled flight in Jan 2015. The remaining four airlines announced their transformation in 2014, but their performance is not yet viewed as typical LCC operator’s performance. Their performance changes will be illustrated in following chapter.

Airline	Airline Shareholder	Entry as an LCC	Launch Date	Fleet ³	Remarks
Spring Airlines	Independent	May 2004	May 2004	A320 x50	Base: Shanghai Hongqiao The longest established LCC in China. Subsidiary of Shanghai Spring International Travel Service.
West Air	HNA	Jun 2013	Jun 2007	A319 x4 A320 x13	Base: Chongqing Jiangbei Second established LCC in China after transformation from FSC. Older

³ Feb 22 2015

					737s were phased out to keep single fleet type as a feature of LCC.
9 Air/ Jiuyuan	Juneyao Airline	Jan 2014	Jan 2014	B738 x3	Base: Guangzhou Baiyun The second built-to-be LCC 10 years after Spring Airlines. First scheduled LCC service on January 15, 2015
China United Airlines	China Eastern Airlines	Jul 2014	Nov 2012	B737 x9 B738 x22	Base: Beijing Nanyuan Became the first of China's big three state-owned LCC. Transformation not yet completed.
China Express	Independent	May 2014	Sep 2006	CRJ x16	Base: Guiyang Undergoing transformation to a low-cost regional carrier model. Transformation not yet completed.
Beijing Capital Airlines	HNA	May 2014	May 2010	A319 x22 A320 x29	Base: Beijing Capital Subsidiary of HNA transfer to LCC following West Air. Transformation not yet completed.
Chengdu Airlines	Independent	May 2014	Jan 2010	A319 x3 A320 x13	Base: Chengdu Shuangliu Transformation not yet completed.

Table 1 - Basic Information of Seven Chinese LCCs

As of March 2015, the 6 currently operating Chinese LCCs have 827 routes⁴, accounting for 12.8% of total routes in the Chinese domestic market. As illustrated in Figure 6, overall Chinese LCCs capacity offers only 8.9% of total ASK (Available Seat Kilometers) provided by Chinese carriers. Figure 7 illustrates Beijing Capital Airlines has the most number of flights with the largest fleet, while Spring Airlines ranks number two. Relationship among Chinese airlines is illustrated in Figure 8.

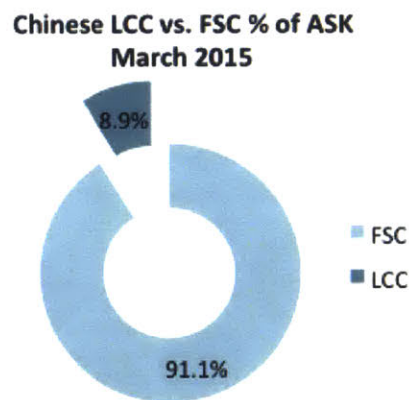


Figure 6 - Chinese LCCs and FSCs comparison in ASK, March 2015

Source: Sabre

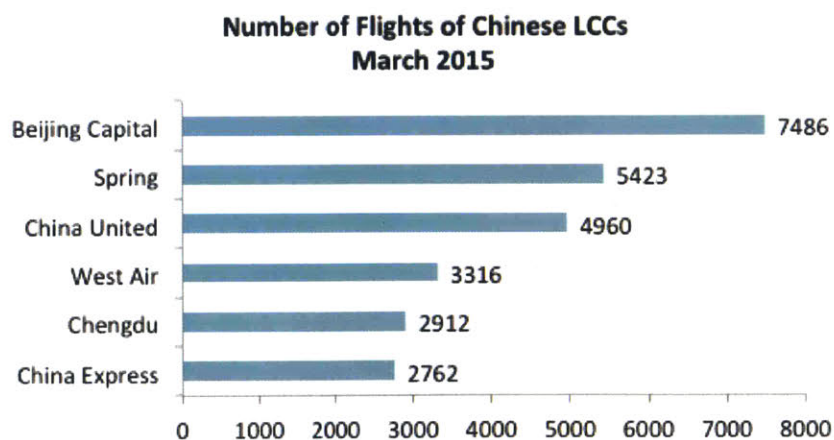


Figure 7 - Ranking of six Chinese LCCs in number of flights

Source: Sabre

⁴ Data from Sabre

CROSS-OWNERSHIP / PARTNERSHIP AMONGST CHINESE CARRIERS*

*Note: % rounded, excludes branch companies

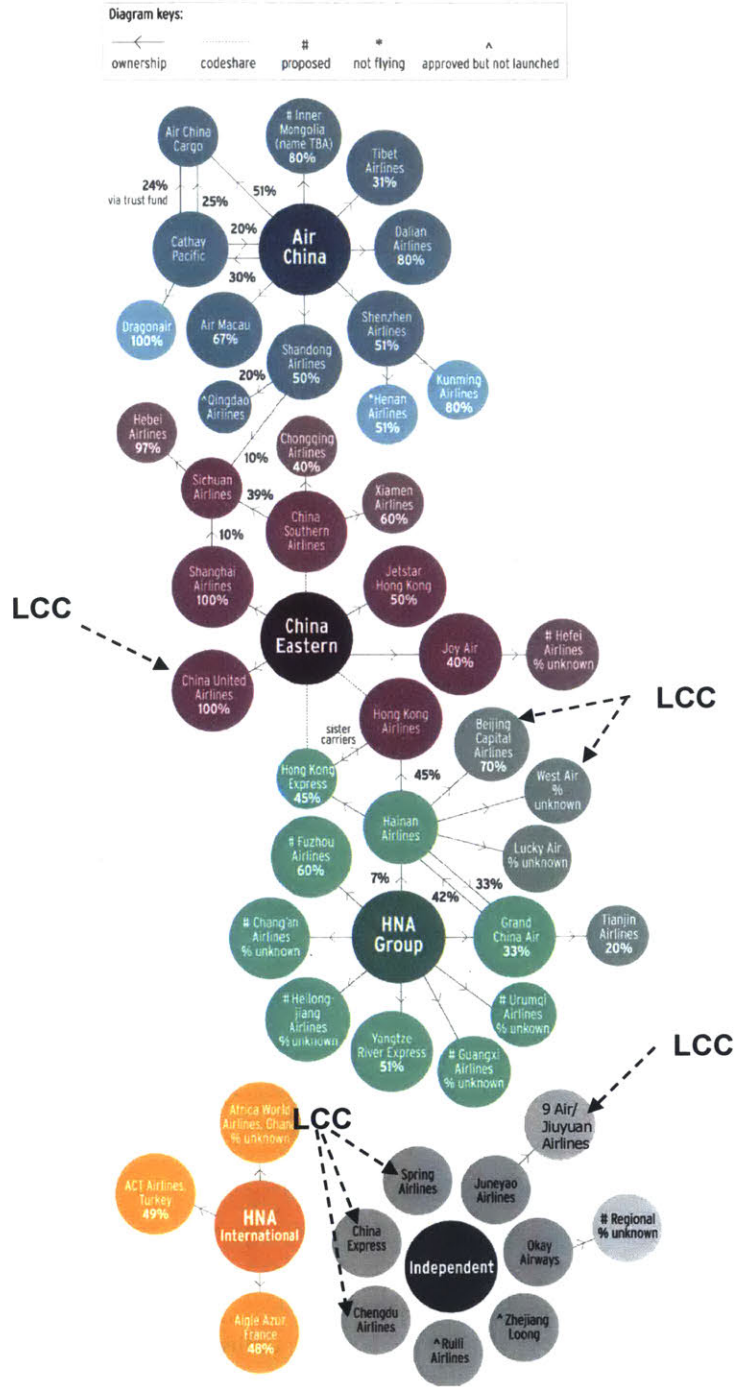


Figure 8 - Relationship among Chinese airlines

Source: CAPA Centre for Aviation

2.2. Development of Chinese LCC market

In 2003, the 16th National Congress of Communist Party of China proclaimed the deregulation of the national infrastructure industries of railways, civil aviation and telecommunications. This action allowed private capital investment in these areas that used to be exclusively state capital. According to a profile story of Wang Zhenghua reported by *China Securities Journal*, at that time Wang Zhenghua, founder and chairman of Spring Airlines and founder of Shanghai Spring International Travel Service, realized his dream of creating LCCs were about to come true. Ever since then, this destiny of Wang Zhenghua has become interwoven in the development of Chinese LCC policies. He began to prepare the required documentation and submitted an operating application to CAAC for the establishment of Spring Airlines.

On January 15, 2004, Yang Yuanyuan, Director of CAAC spoke about the reform and development of China's civil aviation at a press conference held by the State Council Information office. He said there is not yet agreement about whether the CAAC should support LCC business model, but the CAAC had already decided to approve the application of a small LCCs and would love to take it as a pilot project. Spring Airlines stood alone in the journey of exploring the LCC business model since then.

From the first day Spring Airlines was established, it has been working with the CAAC to create an experimental method to operate a LCC. According to Wang Zhenghua, in April 2004, CAAC asked Spring Airlines not to enroll in the ticket sales and departure system of Travelsky, the dominant provider of various systems to China's air travel industry. At that time, all Chinese airlines were using systems produced by Travelsky, paying millions in US dollars per year for agency and maintenance fees. Two months later, CAAC conducted a hearing in Shanghai on the

differentiation of Spring Airlines service. It was the first time that CAAC conducted a hearing for air service differentiation. The decision of the hearing gave permission to conduct differentiated services, such as not providing free in-flight meals, proposed by Spring Airlines.

In spite of all these positive signs at the beginning, it was not until ten years later in 2014 that CAAC published the *Guidance on Promoting the Development of Low-Cost Airlines*. It is the first time CAAC published a detailed explanation concerning future policies to support LCCs. If every aspect mentioned in the Guidance becomes reality in terms of implementation, the era of LCCs is coming to China. Every term in the *Guidance on Promoting the Development of Low-Cost Airlines* aims to address the problems that LCCs are currently facing:

- Enable rapid fleet expansion: For airlines that display a promising development prospect and a sound safety record, the fleet growth is permitted to increase faster and extra quota of importing aircraft can be reserved for them. Current fleet growth rate has been a big constraint for LCCs because they require a large fleet to reach economies of scale, thus spreading out many fixed costs and fees. Currently, Chinese carriers are only allowed up to a 30% fleet growth per year. Some small carriers cannot reach the current maximum allowable growth rate because of the total number of aircraft is also budgeted. According to the *Statistics Reports of Civil Aviation Industry* published by CAAC, fleet increase of the entire Chinese civil aviation was only 167 in 2011, 177 in 2012 and 204 in 2013. In contrast, Ryanair, the leading LCC in Europe, was able to place an order for up to 200 new Boeing aircraft in 2014. The most successful LCC in China, Spring Airlines, owns only 50 aircraft at the end of Feb 2015 in spite of their original plan of 100. This fewer than expected fleet size became a burden on

Spring Airlines in terms of employee and hardware scale. Further, air carrier organizational requirements imposed by CAAC regulations have created difficulties for Spring Airlines to simplify their company structure. Spring Airlines is required by regulation to set up various administrative divisions making the employee to aircraft ratio greater than 1/100.

- Route allocation and slot management based on load factor: LCCs with a higher load factor are able to access more flight slots. This is aimed at breaking the inequality between state-owned airlines and private airlines and allocating slot resource to new startup airlines. The current situation is, all good slots in tier 1 cities are fully occupied by the big three state-owned airlines. All private LCCs can only apply for leftover slots. *Chongqing Economic Times* reported that slots from 10am to 5pm at Beijing, Shanghai, Guangzhou, Chengdu and Chongqing are dominated by the big three airlines. Many popular routes have no slots for LCCs at all. For example Spring Airlines only secured one Beijing-Shanghai slot seven years after they first applied. Because this slot was so unpopular, Spring Airlines couldn't make any money and had to stop flights between the two cities in 2013. Another example is the applications for slots from Shanghai to Fukuoka and Cheju were opposed by the big three airlines even before the LCC applications were officially submitted.
- Lower threshold of establishing low-cost airlines: Simplify the approval procedure to support new startups and LCC subsidiaries of existing airlines. Encourage investment on LCC using private capital.

- Increase the number of pilots: Launch training programs that expand pilot recruitment channels. Maintain the turnover rate of pilot at a reasonable and acceptable level by introducing an improved pilot management mechanism. Shortage of pilots in China has become a serious problem. Pilot under supply is pushing up salaries and benefits of pilots. Crew cost is even higher in private companies than the big three, because new startups have to attract experienced pilots with tempting package. A pilot salary could be as high as 240,000 USD per year[12]. As reported by *CAAC Newspaper*, all airlines in China will lack 18,000 pilots in 2015. Compounding this situation, high crew cost has become a threat to Chinese LCCs.
- Deregulate of pricing policy: Allowing market forces to play a major role and minimizing government intervention. In Oct 2013, CAAC abolished minimum aviation pricing requirements in the domestic market, an important step for LCCs. But the price for an upper limit is still remains as a passenger protection measure. Since 2003, the price of each route can only fluctuate at 45% lower and 25% higher than the standard price published by Chinese Government. In 2006, Spring Airlines was fined 24,000 USD by the Price Control Administration of Jinan City because its “One Yuan” ticket promotion violated the mandatory price range.
- Change the mandatory requirements of on-board services: Remove some services from the mandatory list by allowing LCCs to simplify services. This enables LCCs to charge on ancillary services, such as baggage check-in, fast boarding and seats selection, as compared to FSC services.

- Strive for more international routes and popular slots for LCCs during the negotiation with foreign civil aviation authorities.
- Close supervision of the price of foreign LCCs: Monitor Prices of foreign LCCs which are determined by air service agreements between China and other countries, so as to maintain fair competition with other markets.
- Introduce Low-cost Carrier Terminals (LCCT): CAAC will examine how and where to introduce LCCTs in China. CAAC brings LCCTs into its master planning for renovating and building new airports. The building of LCCTs will create a fair environment for LCCs, which are currently competing for slots against FSCs and bearing full-scale airport fees.
- With guidance from CAAC, airports are encouraged to create facilities that can simplify the boarding process of LCC passengers.
- Reduce airport fees for small airports and airports in the remote western area. The current situation is these airports have much higher airport fees and fewer flights per day than tier 1 and tier 2. Strive for more preferential financial policy on costs of aircraft ownership and spare parts: CAAC will coordinate with national authorities to obtain preferential tax status on importing aircraft and spare parts to reduce aircraft ownership and maintenance costs. Work more closely with financial institutions to enable airlines to gain favorable credit financing support. It is a known “secret” that Chinese airlines are currently forced to accept the “Chinese price” of aircraft from Airbus and Boeing, which is higher than the other parts of the world. This issue is more serious for LCCs because normally, they have less bargaining power with manufacturers because they cannot place high volume orders like the big three airlines.

Also LCCs are normally single fleet type buyers and cannot receive a lower bundle price for several aircraft types from a single manufacturer.

One thing is quite evident from the *Guidance on Promoting the Development of Low-Cost Airlines*, CAAC is serious about introducing big changes in LCC sector. In 2014, Jiaxiang Li, Director of CAAC said “the cake of LCC market is getting bigger through support of policies. Market share of LCCs in China will be 20%-30% by 2030, covering a population of customers 1.5 billion.”

Therefore, many existing players are very optimistic and proactively involved with the anticipated changes.

2.3. Concerns on Chinese LCC Market

Although the current Chinese LCC business model is far more developed than ten years ago, many concerns remain. For example, carriers worry about how long it will take the CAAC and government authorities to make substantial progress on the implementation of the *Guidance on Promoting the Development of Low-Cost Airlines*. Under the current situation, LCC cost cuttings actions rely mainly on sales, general and administrative expenses (SG&A), while they have the same costs as FSCs on aircraft ownership, spare parts, fuel, and airport fees. Wang Zhenghua pointed out that LCCs have 80%-85% of the same costs as FSCs, which have no room of improvement. SG&A, which can be reduced, only takes up to around 11% of total operating cost.

Although we know many FSCs are planning to transform to LCCs, their executives have no experience with LCCs. Their mindset on service provision and cost control is based solely on experience from FSCs. Some industry participants believe that this will impede their ability to successfully operate a LCC. There is no way for those executives to behave as Wang Zhenghua does such as staying at the cheapest motel and take subways when traveling in foreign countries.

Another concern is the limited acceptance level of customers. In a mature LCC market, customers accept a low level of service for a low fare price. For example, there is no compensation or provision of accommodation and meals when delays occur. However, many media reports describe a quarrel between angry customers and Spring Airlines employees because customers were not served meals during extensive delays while customers of other airlines were served meals.

Local government involvement is another concern of developing LCCs. From interviews with several stakeholders in Chinese airlines, I found that airline companies are willing to go low-cost, but have to obey the wishes of local governments to not establish such “low-end” airlines.

3. Analysis of Practice of Chinese LCCs

3.1. Business Model of Chinese LCCs

Because Chinese airlines are rarely known abroad, the following is a detailed introduction to their business model including origins, strategy and cost saving methodologies. Unlike U.S. airlines, which are required to submit their operating and financial data to the Department of Transportation, of the six Chinese LCCs currently operating, Spring Airlines is the only LCC with publicly available data to analyze. For West Air, China United Airlines and 9 Air, I could only acquire some basic qualitative descriptions on how they are or will be operating. For the other three Chinese LCCs (China Express, Beijing Capital and Chengdu Airlines), no introduction will be made due to lack of publicly available information.

3.1.1. Spring Airlines

Spring Airlines currently operates 50 A320⁵ aircraft and this number is planned to reach 100 by 2018. Like any typical LCC, designed to be more efficient by having a lower unit cost, Spring Airlines employs a high density seating configuration which is a single economy class with 180 seats. Its route network covers 90-100 national routes varying with the travel seasons and 26 international routes (including regional routes to Macau, Hong Kong and Taiwan). Spring Airlines headquarters is located at Shanghai Hongqiao airport, with secondary bases at Shenyang, Shijiazhuang, Shenzhen, Tokyo and Osaka. Spring Airlines has managed to

⁵ By Mar 2, 2015

consistently maintain a 95% load factor per flight, which ranks No. 1 among all LCCs currently operating in the world [5].

According to Zhang Wuan, press spokesman of Spring Airlines, they are achieving their marketing slogan “Making flights affordable to everyone” by offering tickets at 9 CNY, 99 CNY, and 199 CNY⁶. These highly discounted tickets take up to 20%-30% of all available tickets, allowing customers to have a higher probability to obtain discounted tickets. Further, according to financial data published by CAAC, Spring Airlines fares are 40% lower than the industry average.

In 2013, EBT of Spring Airlines was 15.8 million USD, with EBT profit margin as high as 15%, ranking No.1 among all Chinese airlines. Its EBT margin is 1.7 times of HNA, 3.2 times of Air China, 4.4 times of China Southern Airlines and 6 times of China Eastern Airlines.

In 2004, Spring Airlines impressed the entire Chinese airline industry for its astounding profitability in its very first year of operation. In 2006, Spring Airlines made a profit of 4.8 million USD with only three A320 aircraft. It even made a 3.2 million USD profit during financial crisis in 2008. From 2011 to 2013, the compound growth rate of Spring Airlines operating revenue was up to 21.72%, with a net profit of 77.0 million, 99.5 million and 117.2 million USD respectively. Attributing to this growth, transportation subsidies accounted for 74.50%, 59.89% and 52.90% respectively of EBT in these three years. These subsidies were set on contract between Spring Airlines, local governments and airport operators based on passenger volume and capacity volume offered by Spring Airlines.

⁶ Chinese currency - Chinese yuan. Same below.

In 2013, unit operating cost (CASM in table 6) of Spring Airlines was 35%-42% lower than other Chinese airlines, while its ticket price, which is reflected by yield (passenger yield in table 6), was 36%-39% lower.

Since establishment, two labels have been attached to Spring Airlines; “Private Airline” and “First LCC”. Also since first established, Spring Travel Agency (one of the first travel agencies to use an IT system) owned 4000 branches which served as ticket offices for Spring Airlines.. This gave Spring Airlines a great advantage for boosting load factors (99% at early stage) and a solid foundation on developing their own systems. According to *China Business Journal*, January 2014, Spring Airlines no longer relied on Spring Travel Agency, which only contributed 15% of passengers to Spring Airlines.

Recipes of the consistent success of Spring Airlines were summarized by Wang Zhenghua as “Two Highs”, “Two Singles” and “Two Lows”.

1. “Two Highs” - High load factor and high utilization

According to Spring Airlines IPO Prospectus, load factor in 2011, 2012 and 2013 were 94.35%, 94.11% and 93.54% respectively, much higher than the average load factor of all Chinese airlines (81.8%, 79.6% and 81.1% during the same period[3][6][7]). Daily utilization of Spring Airlines in 2011, 2012 and 2013 were 11.38, 11.35 and 11.63 block hours, two hours higher than the average number of all Chinese airlines during the same period (9.62, 9.25 and 9.53 [3][6][7]). According to Spring Airlines estimates, operating costs would be reduced 10% if daily utilization increased by 2 to3 hours. Table 2 illustrates the load factor gaps between Spring Airlines and all the other airlines operating identical flight legs.

Flight Leg	Spring Airlines Load Factor (%)	Average load factor of all other airlines (%)
Shanghai-Xiamen	97.42	79.9
Shanghai-Shenyang	95.71	84.2
Shanghai-Guangzhou	94.53	83.7
Shanghai-Harbin	96.67	87.7
Shanghai-Shijiazhuang	93.22	83.6
Shanghai-Sanya	93.26	84.8
Shanghai-Chongqing	95.74	85.6
Shanghai-Chongqing	93.80	82.5
Shanghai-Shenzhen	93.46	80.8
Shenyang-Hangzhou	94.08	84.0

Table 2 - Load factor comparisons on top 10 highest passenger volumes of Spring Airlines in 2012

Source: Spring Airlines IPO Prospectus

High load factor also yielded extra benefits to Spring Airlines. According to CAAC policy, passenger fees paid to airports can be reduced by 25% if the seat numbers on an aircraft is 10% higher than the average of the same aircraft type and load factor is greater than 85%. Seat numbers of Spring Airlines' A320 is 13% higher than the average seat numbers of the A320 fleet in China and its load factor is higher than 90%. As a result, each passenger saved Spring Airlines 10 CNY, resulting in total savings of 16.9 million USD in 2013[8].

2. "Two Singles" – Single fleet and single class

Unlike other top performing LCCs in the world, Chinese LCCs are firm believers of a single aircraft type fleet. Spring Airlines has an all A320 fleet, reducing maintenance, spare parts warehousing, training, and ground handling costs. Such costs would otherwise be higher for

more than 1 aircraft type aircraft fleet. Also as mentioned previously, Spring Airlines A320 aircraft seat capacity is 180, 28 more seats than the average A320 owned by other Chinese airlines.

3. "Two Lows" – Low selling cost and general & administrative cost

For Spring Airlines or any other LCCs, cost savings are mainly from SG&A because other costs are relatively uncontrollable by airline companies and capped by other parties.

As illustrated in Figures 9 and 10, unit selling cost of Spring Airlines is CNY 0.009 per ASK, 80% lower than China Southern Airlines which had the highest unit selling cost among all listed Chinese airlines. Unit general & administrative cost of Spring Airlines is CNY 0.008 per ASK, 50% less than the number of Air China and China Eastern.

Spring Airlines is able to realize savings on selling cost due to its independent selling system and direct sales model. According to Wang Zhenghua, selling cost on average takes up approximately 7% of total operating cost for other Chinese airlines, while this number is only 2% in Spring Airlines [9]. Direct sales account for 85% for Spring Airlines but only 20% for other Chinese airlines. In 2013, Spring Airlines saved 32 million USD on sales commission fees. Because Spring Airlines owns its own, well developed sales systems, it saved 25 million USD in billing fees per year paid to TravelSky. These cost savings on selling cost reflect 30-40 yuan on each ticket[8].

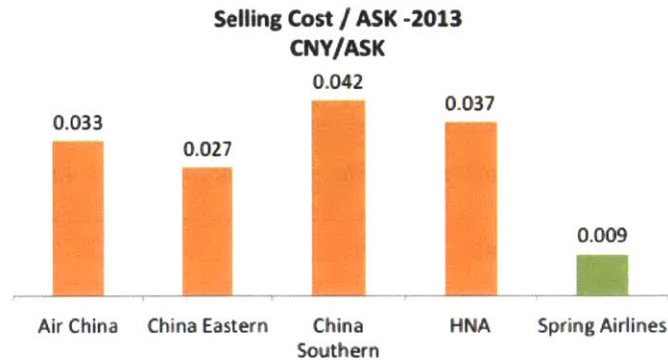


Figure 9 - Selling Cost / ASK comparison – 2013
 Source: Spring Airline IPO Prospectus, annual reports of airlines 2013



Figure 10 - General & Administrative Cost /ASK comparison -2013
 Source: Spring Airline IPO Prospectus, annual reports of airlines 2013

According to an annual report, the employee-to-aircraft ratio for Spring Airlines was 102 at the end of 2013. This ratio is much lower than competitors; 130 for Air China, 143 for China Southern and 144 for China Eastern. Using Air China as benchmark, Spring Airlines saved 21.8 USD million per year, with 39 aircraft with an annual salary 20,000 USD per employee. The employee-to-aircraft ratio of Spring Airlines is more than double than that of Ryanair, EasyJet and Air Asia as illustrated in table 3. However, considering Spring Airlines has a much

smaller fleet than these scalable LCCs, the ratio will continue to decrease as Spring Airlines increases its fleet.

	Southwest	JetBlue	Ryanair	EasyJet	AirAsia	Spring Airlines
Number of Aircraft	680	194	305	217	143	39
Employee-to-aircraft ratio	66	65	30	41	43	102

Table 3 - Employee-to-aircraft ratio comparisons - year end 2013
 Source: Airlines annual reports 2013

To reduce general & administrative cost, Spring Airlines focuses on every single detail. According to *China Securities Journal*, Wang Zhenghua’s personal financial discipline to save every penny is the model for Spring Air to follow. He shares an office with his CEO which is only 10 square meters. He never buys first class tickets for a business trip and he and all his management staff stay only at hotels below 3 stars. He even brought his own food when traveling abroad to save money on meals. He does not use a company car for business purposes. He uses the same water dispenser as all other employees in the building. Following his role model example, all employees carry the responsibility to save cost on everything related to the business operation. In Spring Airlines, aircrew, not a cleaning service, cleans the cabin after passengers disembark. Employees only purchase flight tickets with more than 50% discount for business trips. All documents are in electronic version to save on paper and if printing necessary, it must be done on both sides. Even uniforms of air attendances are 160 USD or less.

Despite the three recipes summarized by Wang Zhenghua, there are also other methods Spring Airlines uses to reduce cost.

Spring Airlines figured out ways to reduce fuel cost, the largest component of all operating costs and the most difficult to reduce. From 2008, they developed a flight management system to calculate standard fuel consumption of each flight and optimized flight profile to reduce fuel consumption. They clean aircraft engines regularly to increase fuel efficiency. They also award bonus pay to pilots who contribute to fuel saving. Eventually, all these efforts paid off. Fuel cost per ton-km is 0.241kg for Spring Airlines averaging 22% lower than that of the A320s of other Chinese airlines [10].

Spring Airlines also saves on parking fees by parking at secondary airports and/or remote aprons where fees are half the price of near terminal aprons. These parking practices save 1000 USD per parked aircraft [10]. As Wang Zhenghua says, “there are tens of ways to save cost”.

However, there are some costs Wang Zhenghua refuses to compromise on. He never sacrifices safety for cost savings. Spring Airlines is the first private airlines to receive a safety award from CAAC. In 2012, CAAC graded Spring Airlines safety at 102, a full score of 100 and 2 bonus which is quite rare. Wang Zhenghua is also very generous when it comes to training employees. He always sends tens of employees to attend workshops or conferences held abroad. In contrast, other Chinese airlines only send one or two. Wang Zhenghua said, “the expense is worthy if employees can learn advanced thoughts from these events”.

Like any other LCC, Spring Airlines is also creating ways to generate revenue. It is clearly stated on their website under notice to travelers, except a 350ml bottle of water, no food or drinks will be provided for free, no matter how long the flight, no matter the flight is international or

domestic. Passengers have to pay fees if they wish to select any seats with different rates in different areas of the aircraft. Otherwise, they are assigned seats randomly, which means people who travel together may not sit together if they don't pay the seat selection fee. Seat selection prices are illustrated in table 4.

	Domestic Flights (excluding Shanghai-Urumqi) in CNY		
Row	At counter	Online	B2B
Row 1	70	49	59
Row 2	50	39	49
Row 3-5 & Row 10	40	29	39
Row 6-9 & Row 11	40	19	29
Row 12 13	40	Not for sale	Not for sale
Row 14-18	Not for sale	9	19
Row 19-30	Not for sale	5	9

Table 4 - Seats selection fees - Spring Airlines
Source: Spring Airlines Website

Besides selling food and drinks, flight attendants also sell other commodities in flight such as model planes and Disney souvenirs. They also generate revenue from advertisements in cabins. In 2011, 2012 and 2013, ancillary revenue as a % of total revenue for Spring Airlines was 4.87%, 4.20% and 4.32% respectively; in terms of ancillary revenue per passenger for the same time frame, it was 4.88, 4.16 and 4.31 USD. These numbers are lower than other LCC competitors in the world. As previously depicted in Figure 2, Spirit Airlines ranks No.1 in terms of percentage of ancillary to total revenue, with an astonishing rate of 38.4% or 51.22 USD per passenger. Another considerable revenue source for Spring Airlines is from subsidies from local governments and airports. In 2013, subsidies to Spring Airlines was 52.9% of EBT.

According to Zhang Wuan, 75% of Spring Airlines frequent flyers are under the age of 30. This is due to the fact that this age group has a relatively low income compared to older workers and prefers low cost over comfort and amenities. In order to increase revenue from this age group, Spring Airlines instituted targeted marketing activities. For example, in March 2014, Spring Airlines operated a “love flight” from Shanghai to Taipei, carrying seven men and seven women who registered for an on-board blind date and one week group tour of Taiwan. To accommodate the behavior of this targeted market age group, Spring Airlines created a mobile platform in order for younger customers to purchase tickets via smart phone applications.

3.1.2. West Air

West Air is a subsidiary of the HNA group. It was founded in 2006 with first flight in June 2007. It is based at Chongqing airport (southwest China) with secondary bases at Zhengzhou and Sanya. As previously mentioned, Chinese LCCs have a firm belief in a single aircraft type fleet. West Air operates 4 A319s and 13 A320s⁷ with an expansion plan of 80-100 A320s by 2020. On May 9th 2013, West Air announced its plans to transform to a Low-cost Carrier. According to Sabre, it operates 90 routes as of March 2015 and has 10.1% market share in Chongqing, ranking No.2.

According to a press release addressing the transformation, West Air focuses on the following issues to reduce their cost:

⁷ By Mar 5, 2015

1. Increase productivity. West Air has a quick turnaround time at Chongqing airport of about 35 minutes. This enables a daily aircraft utilization of 12 hours. Also, West Air changed its all two-class cabin fleet to a single economy class cabin configuration.
2. Direct sales. West Air is targeting 50% direct sales in the future while currently has 30% direct sales.

In terms of ancillary revenue, West Air’s ancillary revenue is around 3% of total revenue, which are generated from in-flight meals, seats selection, early boarding, delay insurance and extra luggage bag check-in. Most of these ancillary options are only recently available because it took quite some time to add these items in to their IT system. The seat selection business model is the same as Spring Airlines. Passengers pay a fee no matter which seat one chooses. Otherwise, seats are assigned a randomly. West Air seat selection pricing fees are illustrated in Table 5.

In CNY	Online
Row 1-3	40
Row 4-10	20
Row 14-24	10
Other seats	N/A

Table 5 - Seats selection fees - West Air
Source: West Air website

In order to expand coverage of their network, West Air partners with bus companies to carry passengers further beyond airports. West Air also partners with local attractions by providing bundled tourist packages. In addition, West Air partners with hotels and car rental companies providing a one-stop-shop bundled transportation and lodging package. Comparing with itself before LCC transformation, West Air reduced costs by 10%, and reduced ticket prices by 15%.

3.1.3. China United Airlines

In July 2014, China United Airlines announced its transform to an LCC, making it the first state-owned LCC in China. It was originally co-founded in 1986 by the Air Force of the Peoples Liberation Army and some state-owned companies. It is now a 100% subsidiary of China Eastern Airlines based at Beijing Nanyuan airport with a fleet of 10 B737s and 21 B738s. Although China United Airlines was restructured into a privately owned airline decades ago, its previous military background makes it the only airline operating at Nanyuan airport, a joint use, civil/military facility, located 13km from downtown Beijing.

According to Sabre, China United Airlines operates 112 routes as of March 2015. It plans to expand its fleet to 80 aircraft in 2019 after moving to the newly planned airport south of Beijing. Since China United is a new entrant in the LCC market, little change has occurred in their way of conducting business. According to Civil Aviation Resource Net of China (CARNOC), China United Airlines did not have an independent selling system at the time of the transform and has not yet started to retrofit their cabin configuration into single class seats. Zhang Lanhai, president of China United Airlines, claimed that they would work on increasing amount of direct sales and consider making ancillary revenue from in-flight meal, seats selection, and luggage check-in. Their goal is to achieve a 20% lower price than other airlines on the same routes. In terms of transformation plans, China United Airlines developed an implementation plan to follow exactly what Spring Airlines does. Zhang Lanhai also says their goal is to achieve a high load factor, high utilization, high-density configuration, low selling cost, low general and administrative cost, single fleet and single class. However, they will not adopt an extra high density configuration

like Spring Airlines. Instead, they plan to have larger pitch between rows and premium seats with larger space for passengers.

While copying Spring Airlines, China United Airlines is well aware of their advantages over other LCCs. Not only is it operating in an airport with no competitors, it is the only subsidiary of a state-owned airline that affords China United Airlines a much better resource on routes and slots.

3.1.4. 9 Air / Jiuyuan

The first commercial flight of 9 Air occurred on Jan 15, 2015. It is currently operating on two routes with its three B738s, Harbin-Wenzhou-Guangzhou and Harbin-Nanjing-Haikou⁸. Its name “9 Yuan” in Chinese reflects its featured ticket price of 9 CNY, which is only available on their APP and WeChat accounts. Similar to Spring Airlines and West Air, there are no free in-flight meals. Also, 9 Air charges for seat selection, insurance, any checked-in luggage and second carry-on bag.

9 Air is an affiliation of Juneyao Airlines based at Shanghai where 9 Air is based at Guangzhou. 9 Air is seen as a big threat to China Southern Airlines, which is the dominant state-owned FSC airline in Guangzhou for many years. 9 Air plans to expand its fleet to 60 B738s and B737MAX by 2020 to operate a network of 5 hours flights from Guangzhou. Because they have just begun commercial operations, it is not yet a public company and thus, currently has no available resources to understand more about their operations. However, there is some news release that helps us understand their business model.

⁸ By end of March 2015

9 Air aims to achieve a 20%-30% lower price than all other airlines on the same routes. To reduce cost, 9 Air plans to create a single class, single fleet and high utilization as all Chinese LCCs do. They intend to maintain an employee-to-aircraft ratio at 90:1 and a daily utilization of 12-13 hours. There are configured as 189 seats in their B738 with 30 inches pitch. Ji Guangping, president of 9 Air, said the reason they chose B738 verse the A320 is that a B738 accommodate more seats than an A320. 9 Air even started selling advertising in the cabin on its very first aircraft. Regarding their sales model, 9 Air will focus on direct sales utilizing mobile devices and their website. As an incentive to use their mobile app or website, customers will receive a 60% discount on their check-in luggage fee if they purchase their tickets online or on mobile devise.

3.2. Financial Performance of Chinese LCCs

Table 6 illustrates the financial and operational figures among Spring Airlines, 4 other public Chinese FSCs and LCCs in the U.S., Europe and Asia. Because Spring Airlines is the only public airline of Chinese LCCs, I listed data of other Chinese FSCs due to lack of domestic benchmarks. It is surprising to see, that even compared with the world's leading LCCs, Spring Airlines has the highest load factor (95%) and highest return on equity (26.7%) of all airlines in this analysis. It almost achieves the highest net margin (11.2%), which is less than Ryanair (11.7%). However, Spring Airlines only ranks 5th in terms of operating margin (8.4%), while Spirit achieved an astonishing 17%. The reason for this is the high provision for income taxes of Spirit drew back its net income margin while Spring Airlines collected subsidies (not deemed as operating revenue) from local governments which contributed to its high net income margin.

2013 Fiscal Year in USD	Spring Airlines	HNA	Air China	China Southern	China Eastern	JetBlue	Southwest	Spirit	Allegiant	Virgin America	Frontier	Ryanair	AirAsia
CASM (Excluding Fuel)	0.0520	0.0831	0.0887	0.0868	0.0997	0.078	0.0818	0.056	0.056	0.0683	N/A	0.0411	0.0357
CASM(\$/ASM)	0.0881	0.1373	0.1383	0.1359	0.1518	0.1171	0.1260	0.0992	0.1033	0.1098	0.1202	0.0752	0.0712
Passenger Yield (\$/RPM)	0.0966	0.1504	0.1578	0.1536	0.1564	0.1387	0.1602	0.0822	0.0928	0.1314	0.1148	0.0839	0.0602
Passenger Revenue per ASM - RASM (\$)	0.0904	0.1300	0.1275	0.1221	0.1239	0.1161	0.1283	0.0713	0.0825	0.1053	0.1041	0.0689	0.0483
Operating Revenue per ASM - RASM (\$)	0.0962	0.1484	0.1444	0.1363	0.1545	0.1271	0.1358	0.1195	0.1223	0.1165	0.1247	0.0881	0.0822
Passenger Load Factor	94%	86%	81%	79%	79%	84%	80%	87%	89%	80%	91%	82%	80%
Average Passenger Fare		163.5	179.2	154.4	148.0	163.19	154.72	133.27	137.42	193.64	137.42	63.35	52.37
Average Stage Length (sm)		N/A	N/A	N/A	N/A	1,090	703	958	952	1474	1,117	754	1,144
Passengers (millions)	10.6	26.0	77.7	91.8	79.1	30.5	108.1	12.1	7.2	6,329	10.7	79.3	21.0
ASM's (millions)	10,957	32,698	109,160	116,072	94,495	42,824	130,344	13,837	8,146	12,243	10,866	72,830	19,624
RPM's (millions)	10,249	28,264	88,215	92,222	74,851	35,836	104,348	12,000	7,129	9,814	9,858	59,866	15,741
Operating Revenue (\$ millions)	1,054	4,853	15,759	15,818	14,602	5,441	17,699	1,654	996	1,427	1,356	6,419	1,613
Passenger Revenue (\$ millions)	990	4,250	13,920	14,169	11,706	4,971	16,721	986	941	1,289	1,132	5,020	948
Operating Expenses (\$millions)	965	4,489	15,098	15,775	14,349	5,013	16,421	1,372	841	1,344	1,307	5,475	1,398
Operating Income (\$ millions)	88	364	661	43	253	428	1,278	282	155	81	49	944	215
Operating Margin	8.4%	7.5%	4.2%	0.3%	1.7%	7.9%	7.2%	17.0%	15.5%	5.7%	3.6%	14.7%	13.3%
Net Income (\$ millions)	118	338	524	441	475	168	754	177	92	10	N/A	748	114
Net Margin	11.2%	7.0%	3.3%	2.8%	3.3%	3.1%	4.3%	10.7%	9.3%	0.7%	N/A	11.7%	7.1%
Assets (\$millions)	1,228	16,578	32,919	26,518	22,483	7,350	19,345	1,180	930	N/A	N/A	11,753	5,633
Total Equity (\$ millions)	440	4,097	9,237	6,814	4,588	2,134	7,345	769	377	377	N/A	4,301	1,578
Debt/Equity Ratio	1.79	3.05	2.56	2.89	3.90	2.44	1.63	0.53	1.46	N/A	N/A	1.73	2.57
Asset Turnover Ratio (ATO) Sales/Assets	0.86	0.29	0.48	0.60	0.65	0.74	0.91	1.4	1.07	N/A	N/A	0.55	0.29
Return on Assets % (RoA) Margin x ATO	9.6%	2.0%	1.6%	1.7%	2.1%	2.3%	3.9%	15.0%	9.9%	N/A	N/A	6.4%	2.0%
Assets/Equity (Leverage)	2.79	4.05	3.56	3.89	4.90	3.44	2.63	1.53	2.47	N/A	N/A	2.73	3.57
RoE(Return on Equity)	26.7%	8.3%	5.7%	6.5%	10.4%	7.9%	10.3%	23.0%	24.4%	N/A	N/A	17.4%	7.2%

Table 6 - LCC comparison table - Spring Airlines, other listed Chinese airlines and LCCs worldwide

Source: 2013 annual reports of airlines, Spring Airlines IPO Prospectus

* Spring Airlines and HNA are listed only in the Chinese stock market, so their financial numbers are based on PRC accounting standards. Financial numbers of the other airlines is based on the International Financial Reporting Standards (IFRS). Necessary adjustments are made in order to make a reasonable comparison.

* According to the accounting policy of Spring Airlines, passenger revenue includes excess baggage check-in revenue. Table 6 deducts excess baggage check-in revenue from passenger revenue and considers it as ancillary revenue.

* Exchange ratio: 1 USD = 6.23 CNY, 1 USD = 0.76 Euro, 1 USD = 3.17 RM

As previously mentioned, Spring Airlines' CASM is 35-42% lower than four other Chinese airline companies and lower than all six LCCs in the U.S. market. As a result, further improvement discussion on cost reduction for Spring Airlines in next chapter will take Ryanair and AirAsia as benchmarks.

The yield of Spring Airlines is approximately 36%-39% lower than the other four Chinese airline companies, but higher than Ryanair, AirAsia and the two ULCC (ultra low cost carrier) Spirit and Allegiant. Detailed revenue analysis and improvement suggestion would be discussed in next chapter.

Asset turnover ratio (ATO) indicates how well airlines are using their assets to produce sales. Spring Airlines ranks No.4 (0.86) following Spirit (1.4), Allegiant (1.07) and Southwest (0.91).

Return on assets (ROA) combines profit margin and ATO. The ROA of Spring Airlines is 9.6%, narrowly behind Allegiant at 9.9%, while Spirit has the highest 15%.

Because of a relatively high leverage ratio (assets to equity) and a high profit margin, Spring Airlines has the highest ROE (return to equity) among all the airlines in the table, which means it offers a very good return to its shareholders.

4. Practical Improvements to Chinese LCCs

Thus far, the discussion has established a basic understanding of CASM and yield of Spring Airlines based on comparison with other carriers. This chapter will further examine analysis on Spring Airlines cost and revenue. Improvements addressing cost reduction and revenue enhancements will be recommended.

4.1. Cost Reduction

Because Spring Airlines has lower CASM than all American LCCs, comparison will only be made with Ryanair and AirAsia as benchmarks to discuss cost reduction for Spring Airlines. Table 7 indicates the breakdown of the operating cost of Ryanair, AirAsia and Spring Airlines in fiscal year 2013⁹.

Ryanair	\$/ASM	AirAsia	\$/ASM	Spring Airlines	\$/ASM
ASM		ASM		ASK	10,957
Staff Costs	0.0079	Staff Costs	0.0098	Staff Cost	0.0117
Depreciation	0.0059	Depreciation	0.0096	Aircraft Rental & Depreciation	0.0122
fuel and oil	0.0340	Fuel	0.0356	Fuel	0.0361
Maintenance Materials & Repairs	0.0022	Maintenance	0.0022	Maintenance	0.0052
Aircraft Rentals	0.0018	User Charges & Other Related Expenses	0.0079	Pilot Training	0.0018
Route Charges	0.0088	Aircraft Operating Lease	0.0030	CAAC Development Fund	0.0026
Airport and Handling Charges	0.0110	Other Operating Expenses	0.0031	Landing Fee	0.0097
Marketing, Distribution & Other	0.0036	Total	0.0712	Others	0.0034
Total	0.0752			Marketing, Distribution & Others	0.0010
				Sales Cost	0.0022
				Management Cost	0.0022
				Total	0.0881
Total	0.0752		0.0712		0.0881
ex fuel	0.0411		0.0357		0.0520
ex fuel & staff	0.0333		0.0258		0.0385
ex fuel & staff & ownership	0.0256		0.0132		0.0263
ex fuel & staff & ownership & mtx	0.0234		0.0110		0.0211
Fleet	305		158		39
Employee	9,059		6,089		3,986
Employee-to-fleet Ratio	30		39		102

Table 7 - Breakdown of operating cost of Ryanair, AirAsia and Spring Airlines in fiscal year 2013

Source: 2013 Annual reports of Ryanair and AirAsia, Spring Airlines IPO Prospectus

⁹ Fiscal year 2013 of Ryanair, AirAsia and Spring Airlines ends March 31, December 31, and December 31 respectively.

Although the three airlines categorize their costs differently, their four main costs, staff, aircraft ownership, fuel and maintenance, can still be compared. These four costs combined take up 70% to 80% of total operating cost. Spring Airlines has the highest cost in all four categories. We will discuss the reasons for these high costs and propose cost reduction recommendations. However, some costs are difficult to or cannot be cut because they are completely dependent on market environment and government policies.

First, staff cost is not high only for Spring Airlines, but also for all Chinese airlines in general. The primary reason is the high cost of pilots. As previously mentioned, private airlines have to pay higher salaries to retain pilots. The annual salary of a captain in a state-owned airline is around 162,000 USD [13], while the salary for a private airline captain, such as Spring Airlines, can be as high as 240,000 USD [12]. This figure is much higher than the average annual salary for a 10 year veteran captain in a U.S. airline, which is 166,784 USD [14]. Besides high pilot salary, too many employees is another critical reason for high staff cost. Table 8 illustrates the great difference in the employment numbers between Spring Airlines and Ryanair. According to CAAC regulations, each aircraft must be assigned 5 to 6 sets of crew (one set crew is one captain and one co-pilot) making the ratio of pilots per aircraft is difficult to decrease. Despite the crew set requirement, differences of employees per aircraft between the two airlines spread over four other job activities are significant. Although Spring Airlines has emphasized that they have attempted to minimize their labor scale, and have many service agreements with outside partners, there remains many things that could be done to reduce labor redundancy. Second, in terms of aircraft ownership cost, Chinese Airlines do not have bargaining power in doing business with of Boeing or Airbus. As previously mentioned, Chinese airlines are charged a

“Chinese price” for aircraft manufactured by Airbus and Boeing which is higher than other markets. Compounding this situation, Chinese airlines cannot make large volume orders like European or American airlines do due to regulatory quota control, there is even less chance that they can negotiate a preferential price.

Fleet	Ryanair		Spring Airlines	
	305		39	
	Number of employees	Employee-to-aircraft	Number of employees	Employee-to-aircraft
Pilots	2625	8.6	511	13.1
Flight Attendants	5763	18.9	701	18.0
Maintenance	139	0.5	600	15.4
Ground Operations & Others	229	0.8	1553	39.8
Management	99	0.3	174	4.5
Administrative	282	0.9	447	11.5
Total	9137	30.0	3986	102.2

Table 8 - Employee comparison between Ryanair and Spring Airlines
 Source: 2013 Annual reports of Ryanair and Spring Airlines IPO Prospectus

Third, in 2013 the average jet fuel price for Spring Airlines was 1041 USD per ton while the number was 935 USD per ton for Ryanair. The difference is due to the fact Ryanair uses price hedging to protect itself from fuel fluctuations and fuel prices has long been higher in China than in the U. S. According to Tang Yanlin, chairman and CEO of International Air Transport Association (IATA), the 3 big state-owned domestic fuel suppliers (China National Petroleum Corporation, China Petrochemical Corporation and China National Aviation Fuel), control aviation fuel prices causing Chinese carriers to pay the highest aviation fuel costs in the industry. For example, if the average price of jet fuel worldwide is 950 USD per ton, jet fuel price in Singapore airport would be around 960-970 USD per ton. But at Beijing Capital Airport, fuel price will be 1050 USD per ton due to the high difference between purchase and sale price. According to Tang Yanlin, other primary airports in Asia such as Tokyo, Seoul, Manila or Kuala

Lumpur, have a lower difference between purchase and sale price. To improve their fuel cost situation, Chinese LCCs should work on fuel price hedging to reduce cost, but this is will produce little savings. A fundamental restructuring of the aviation fuel supply system is the only solution for Chinese LCCs to save on fuel cost.

Finally, Spring Airlines maintenance costs are more than twice as high as Ryanair and AirAsia. Since Ryanair and AirAsia have the same maintenance cost level per ASM, we will compare them with Ryanair and discuss why Spring Airlines maintenance costs are so high. Let us first exempt some possible reasons. Although Spring Airlines employs more maintenance engineers than Ryanair, labor cost is included in total staff cost and not double counted as cost of maintenance. Second, the engines on Spring Airlines A320s are all model CFM56-5B while the engines on Ryanair B738s are all model CFM56-7B. Not only do Spring Airlines' engines have a lower thrust rating but cost more for engine overhaul maintenance. The following are several factors that contribute to the high cost of engine maintenance. First, although both the airlines perform heavy airframe maintenance, due to a small fleet of only 39 aircraft, Spring Airlines cannot negotiate a high volume maintenance contract like Ryanair. Both Spring Airlines and Ryanair perform heavy airframe maintenance on their own and contract engine overhaul services and rotatable parts [6][11][15]. Another reason for high maintenance cost is that tax is double counted on spare parts. If spare parts or engines are repaired outside China and sent back, it is deemed as import and subject to custom duties and VAT. In a conclusion, the lack of bargaining power and double counted tax on spare parts are the two main reasons for the high maintenance costs. Chinese LCCs should expand their fleets to gain bargaining power with

outside contractors to cut their service fees. They should also appeal for tax deduction from Chinese authorities.

Apart from these four core costs, Spring Airlines has cost per ASM (item “ex. fuel & staff & ownership & mtx” in table 7) lower than Ryanair, but still twice as high as AirAsia. The main reason is that AirAsia pays lower landing fees and route charges while other LCCs in China and Europe are subject to higher fees. Such costs can only be reduced after CAAC fulfills its plans published in the *Guidance on Promoting the Development of Low-Cost Airlines*.

4.2. Revenue enhancement

The key to create great profit for LCCs is through ancillary revenue. Figure 11 illustrates, with the exception of Spring Airlines, the other LCCs have ancillary revenue above their operating profits. This means without ancillary revenue, the other LCCs would have an operating loss¹⁰. Spring Airlines not only has the least ancillary revenue contribution to operating margin, but also has the lowest unit ancillary revenue in USD per RPM as illustrated in Figure 12.

¹⁰ Frontier Airlines is not being discussed here due to lack of public information on its ancillary revenue.

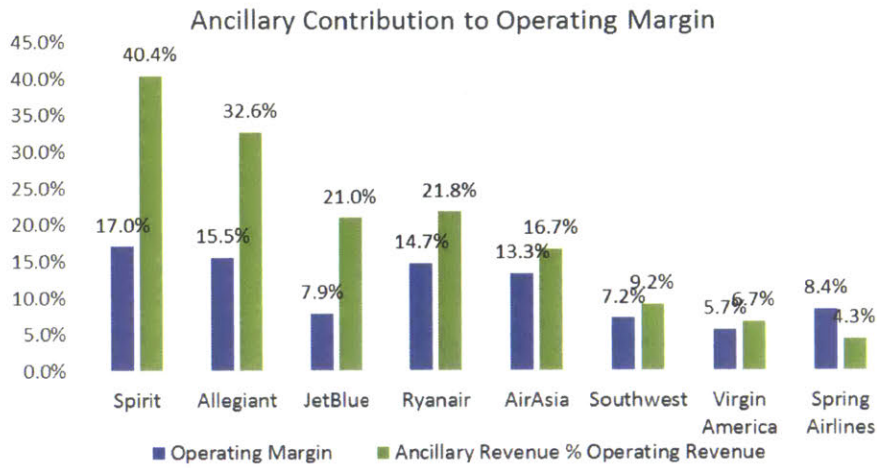


Figure 11 - Ancillary contribution to operating margin 2013
 Source: 2013 annual reports of airlines, Spring Airlines IPO Prospectus

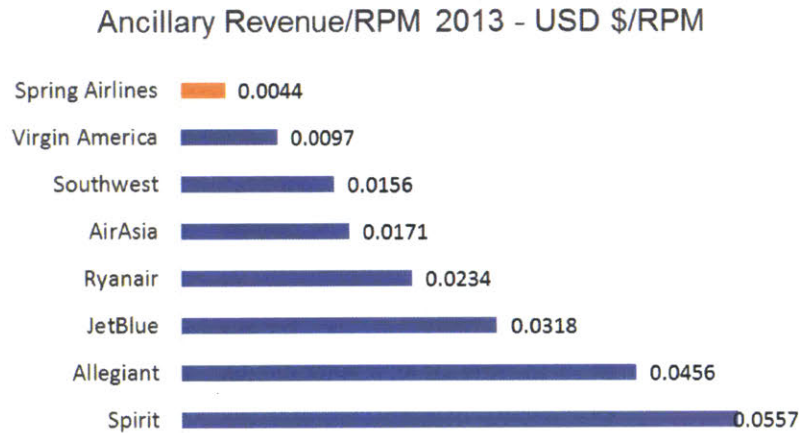


Figure 12 - Ancillary Revenue / RPM 2013
 Source: 2013 annual reports of airlines, Spring Airlines IPO Prospectus

**Spring Airlines - Ancillary Revenue Source
2013**

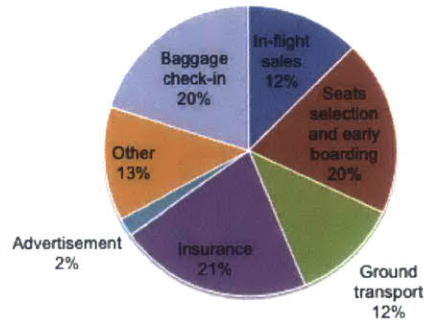
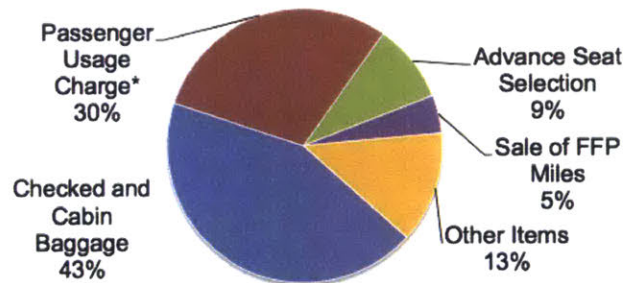


Figure 13 - Spring Airlines ancillary revenue breakdown 2013
Source: Spring Airlines IPO Prospectus

Spirit Airlines - Ancillary Revenue Sources



* Fee applies to all bookings except those made at the airport.

Figure 14 - Spirit Airlines ancillary revenue breakdown 2013
Source: 2013 Form 10-K for Spirit Airlines

1. Baggage check-in revenue

From examining Figures 13 and 14, we can see the differences in revenue structures between Spring Airlines and Spirit. One distinct difference is the percentage of baggage check-in revenue. Baggage check-in revenue produces almost half of Spirit Airlines ancillary revenue. Figure 15 illustrates a high baggage check-in revenue to ancillary revenue is a common practice of many LCCs. To explain why Spring Airlines has such a low ancillary revenue from baggage check-in, we need to examine its baggage policy.

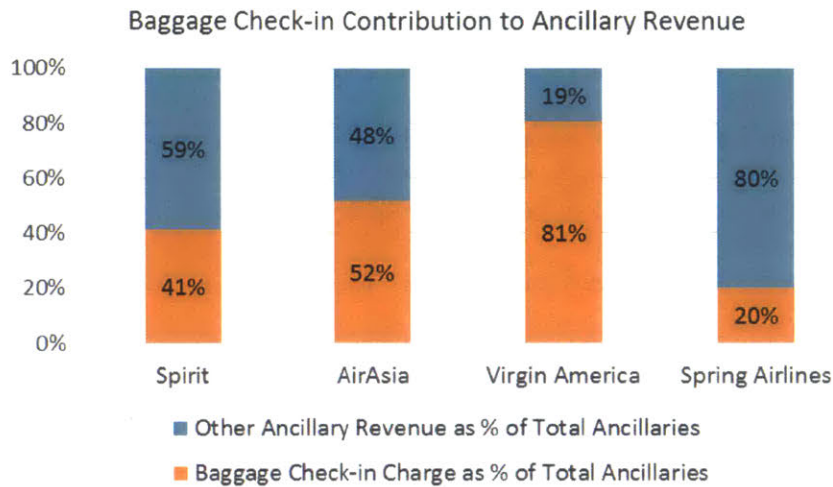


Figure 15 - Baggage check-in comparison as % of total ancillary revenue
 Source: 2013 annual reports of airlines, Spring Airlines IPO Prospectus

In 2013, passengers who purchased tickets from Spring Airlines are allowed one 5kg carry-on and one 10kg checked-in baggage free of charge. Every kilogram of excess baggage is charged 1.5% of the full ticket price. However, for tickets with super-high discounts, such as 99 CNY tickets, passengers are allowed only one 7kg carry-on baggage for free. Passengers can purchase 10kg check-in baggage for CNY 30 online or CNY 60 at the airport. Any check-in baggage above 10kg would be still charged 1.5% of the full ticket price. During this time period, West Airlines was the only LCC in operation. Its excess baggage policy was similar to Spring Airlines but less strict. Now in 2015, Chinese LCCs such as China United Airlines, Beijing Capital Airlines, Chengdu Airlines or 9 Air, have either exactly the same baggage policies as Spring Airlines or more allowance on the bag numbers/weight of free carry-ons and checked-in baggage. These policies are similar to U.S. or European LCCs. This raises the question, why do Chinese LCCs have much less baggage fee contribution to their total ancillary revenue than LCCs in other regions of the world?

The reason for this huge gap is the lower charge rate. For example, Spring Airlines passengers pay for the first 10kg check-in baggage at 4.8 USD (30 CNY) online, while this charge rate is 25 USD for 25kg check-in baggage for Virgin America, 20 USD for 15kg check-in baggage for Ryanair or 30 USD for first 18kg check-in baggage for Spirit. Obviously, Spring Airlines and other Chinese LCCs are charging lower fees for baggage. Therefore, they have room to further increase their baggage charge rates, although they should prepare for market resistance and an increase in the number of complaints.

2. Seat selection revenue

Similar to what we discussed about baggage check-in fees, seat selection fees of Spring Airlines is also much lower than other of the world's LCCs. Unlike some typical practices, Spring Airlines seat selection fee is levied against every seat on board instead of only charging for spacious rows. However, the charge rate range of Spring Airlines is only 0.2 to 8.7 USD while the range for AirAsia is 2.26 to 11.32 USD, 8.5 to 15.5 USD for Ryanair, 5 to 50 USD for Spirit Airlines and 30 to 1,190 USD for Virgin America¹¹. Apparently, Spring Airlines was very cautious on its seat selection charge rate to keep it low. Spring Airlines should reconsider its seat selection charge rate so to contribute more to ancillary revenue, but not go to the extreme as Virgin America.

3. Expand ancillary services

With the exception of increasing charge rates, Spring Airlines and other Chinese LCCs could also expand their charges to other territories. Table 4.3 illustrates sources of ancillary revenue of

¹¹ Charge rate ranges are from website of all the airlines.

LCCs under comparison. Spring Airlines has already been working on most of the ancillaries, but there are still more possible revenue enhancement opportunities to explore. For example, Spring Airlines has flights connecting passengers from the interior of China to cities in Japan and South Asia. Spring Airlines could create a program similar to “Fly Thru” of AirAsia, an extra ancillary service where the transferring passenger only needs to perform a single baggage check-in with no need to transfer bags at the connecting airport. Also, on-board Wi-Fi should be considered by Spring Airlines and other Chinese LCCs as well.

	Spring Airlines	AirAsia	Ryanair	JetBlue	Southwest	Spirit	Allegiant	Virgin America
Baggage Check-in	x	x	x	x	x	x	x	x
Seats Selection	x	x	x	x	x	x	x	
Early Boarding	x	x	x	x	x		x	
Ground Transportation Service(self-owned)	x							
In-flight Sales	x	x	x	x		x	x	
Insurance	x		x			x	x	
Advertisement	x	x						
Fly Thru		x						
Change & Cancellation	x	x		x		x	x	
Internet-related			x					
Credit Card Fees			x			x		
Sales of Rail & Bus Tickets	x		x			x	x	
Hotel Booking	x		x		x	x	x	
3rd Party Car Service	x		x		x	x	x	
Mail and Cargo		x		x				
Charter				x				
FFP Charge					x	x		x
Passenger Usage						x	x	
Pet Transportation					x			x
Unaccompanied Minors					x			

Table 9 - Sources of LCCs ancillary revenue 2013

Source: 2013 annual reports of airlines, Spring Airlines IPO Prospectus

5. Conclusions and Recommendations

China is Asia's "last" LCC market. Market share of LCCs in China is only 5% while 22% is the world average. For the past decade, Spring Airlines has been the sole Chinese LCC and has endured a difficult period of government regulations that impede LCC development. However, ever since CAAC proclaimed "an urgent need to develop LCCs" in 2013, Chinese LCCs have sprung up like mushrooms.

Spring Airlines has become the role model LCC in China at this point in time. Other new or transforming LCCs have not demonstrated positive financial results in accordance with their LCC strategy plans. From a financial performance perspective, we see what Spring Airlines has been doing well and what requires improvement. Because Spring Airlines has become the LCC role model in China, its performance is viewed as the standard for all other emerging Chinese LCCs to follow.

Regarding cost, Spring Airlines has very good control of its SG&A costs. Spring Airlines practices of reducing these costs are closely followed by other new LCCs. By developing its own sales systems and going direct sales, Spring Airlines saves 25 million USD per year and its unit selling cost is 80% lower than all other Chinese airlines. Its unit general & administrative costs are 50% lower than other publically listed Chinese airlines accomplished through "penny-pinching" spending practices. However, SG&A costs only account for less than 10% of total operating cost. Spring Airlines and other Chinese LCCs still have room to further reduce their unit costs on personnel, fuel, aircraft ownership, maintenance, airport fee and navigation fee which account for 70%-85% of total operating cost.

Chinese civil aviation authorities plan to issue new preferential policies in the near future addressing the development of the LCC market aimed at facilitating the cutting of core costs. For example, authorities have a plan to enhance pilot training programs to help increase the number of pilots to reduce crew cost. Terminals exclusively for use by LCCs will also be introduced in China. These actions coupled with a reduction in airport fees at some remote airports will be of great benefit to LCC cost reduction. Also, authorities will work on import tax and VAT relief policies aimed at reducing LCC aircraft ownership and maintenance costs. Another significant move is to enable rapid fleet expansion so LCCs can achieve better economies of scale, spreading many of their costs, especially expenditures on personnel.

While awaiting good news from authorities, Chinese LCCs themselves could also work on business improvements on cost reduction such as a reduction in the employee-to-aircraft ratio. Although Chinese LCCs have made some advancement on improving this ratio, as compared to Chinese FSCs, much work remains to be done as this ratio is three times higher compared to the leading LCCs in the world.

In regard to revenue, a common practice of LCCs in a market is the provision of extremely low fares only for the passenger transportation service and then creating the conditions for passengers to purchase ancillary services to the greatest extent possible. However, what makes Spring Airlines unique among all the other LCCs under comparison, Spring Airlines is the only LCC to achieve a positive operating profit without ancillary revenue. The reason for this phenomenon is that Chinese consumers are not mentally ready for the LCC model, of which is to pay extra for services that are included by FSCs. There have been many negative behaviors displayed by Chinese passengers because they were unsatisfied with the services provided by

LCCs. Because of these behaviors, in 2007 Spring Airlines compiled a passenger “blacklist” called “list of passengers that Spring Airlines does not have the capability to provide service for”. Effectively, these passengers cannot book a Spring Airlines flight for a period of three years after being blacklisted. This explains why Spring Airlines has been so reluctant to institute additional ancillary revenue enhancements.

News concerning these quarrels on flights has increased the exposure of LCCs and making this business model widely known to consumers. This coupled with policies which remove fare caps and mandatory services enable more room for Chinese LCCs to raise ancillary revenues. Finally, compared to other LCCs in the world, Spring Airlines charges very little for excess baggage and seat selection. The raising of these fees would yield a positive effect on ancillary revenue.

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